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A Weekly Medical Journal.

EDITED BY

GEORGE M. GOULD, A.M., M.D.

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ORIGINAL ARTICLES.

APPENDICITIS.

Further Consideration of this Subject, with Tabulated Report of Cases not Previously Published.[1]

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IN order better to appreciate the trend of thought and practice on the subject of appendicitis at the present day, it will be greatly to our advantage to take a view of the work of the last five years. There has been no controversy in the history of medicine in which the struggle has been so intense between the surgeon and the physician as on that of appendicitis. Both parties have been honest in their convictions, and both equally positive that they are right. We naturally seek an explanation for this diversity of opinion as well as action, and the explanation is not difficult to discern. Differences of opinion as to the clinical course and probable results with operative and non-operative treatment have been almost entirely due to erroneous notions of the pathologic conditions.

Up to five years ago we had of the pathology of appendicitis practically no other but that of the post-mortem table; that has to-day been almost entirely superseded by the teaching of the operating-table. To-day we observe on the operating-table pathologic changes almost from the moment of their beginning until the destruction of the parts concerned is complete, whereas formerly we had deductions, and these very erroneous ones, from conditions that existed before the pathologic changes ensued which produced death. From results found post mortem we inferred the cause and course, and here was the source of error; to-day we observe the disease in the various stages of its progress from its inception to the final result. We are therefore preëminently qualified to arrive at a correct conclusion, inasmuch as our opportunities are so much greater for observing pathologic changes as they progress.

Now, on what points have the surgeon and the physician differed, and what has led to the diversity of opinion?

In 1888, when Kraft wrote his excellent monograph on appendicitis in *Volkmann's Vorträge*, it was the prevalent opinion of the profession all over the world that the vast majority of diseases in the sacro-iliac region were due to cecitis, an inflammation of the cecum or its surrounding tissues as a result of disease of that viscus, and it was variously known as typhilitis, perityphilitis, and cecitis.

Then, after Kraft's announcement, physicians gradually yielded point after after point until finally to day it is agreed that all except 2 per cent. of the inflammatory pathologic lesions about the caput coli are due to primary lesions of the appendix.

We may now regard the first point as practically settled.

The next argument advanced on theoretic considerations was that the appendix in inflammatory infections becomes swollen, and relieves itself by the discharge of its inflammatory products through its normal opening into the intestine, thus effecting a cure. What have we learned from observations at the operating-table? That in inflammatory lesions of the appendix the canal is rarely relieved of its inflammatory products in the way suggested, but is relieved by a necrosis of its wall and perforation. This is followed by the formation of an abscess and subsequent necrosis of the attached wall of the viscus to which it is adherent, the contents of the abscess escaping into the intestine.

The next contest was over the presence or absence of pus outside of the appendix in the majority of acute cases. Observation in operations has shown that in the acute stage pus is found outside of the appendix in 94 per cent. of the cases; that the existence of pus outside of the appendix does not demand a perforation of that organ for its production. That infection of the peritoneum and the formation of a peri-appendicular abscess may occur with an internal ulceration of the appendix and no perforation, I have shown by cases reported in the *Journal of the American Medical Association*, March 3 to 24, 1894. In that paper this pathologic condition was for the first time mentioned in the literature. While the profession was not prepared to believe that pus was present in the form of a circumscribed peri-appendicular abscess in practically all of the cases of acute appendicitis, it had been acknowledged for many years that in some cases abscess occurred around the caput coli, which emptied into the intestinal tract, and the patient recovered. We know now that this is the course in the very great majority of cases.

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[1] Read before the Chicago Pathological Society, December 10, 1894.

The last and final questions, and those on which the controversy is still spirited, are (*a*) the pathologic changes produced by perforation of the appendix into the peritoneal cavity; (*b*) the likelihood of that perforation, and also perforation of the circumscribed abscesses about it into the peritoneal cavity; (*c*) the immediate and remote symptomatic and physical manifestations of the latter, and (*d*) the ultimate result of such rupture.

The pathologic changes produced depend, first, on the character of the material admitted into the peritoneal cavity, *i. e.*, whether the contents of the appendix or abscess consist of (*a*) pus or débris in which the staphylococcus predominates; (*b*) whether the streptococcus predominates; (*c*) whether the bacillus coli commune exists in its virulent or inert condition, and (*d*) whether the pus, in which any or all of these may have existed, has become innocuous; second, on the quantity of material admitted at one time into the peritoneal cavity; and third, on the condition of the peritoneum at the time of admission of pus.

I have observed in patients, and demonstrated experimentally, that pus in which the staphylococcus and the inert bacillus coli commune predominated could be free in the peritoneal cavity for a long period of time, and produce but very slight changes in the peritoneum, *i. e.*, that the intestine may be bathed in pus of this character for days without excoriating the endothelium of the peritoneum. I have observed a pint of pus of this character in the peritoneum of a patient in whom the history showed conclusively that it must have been present for five days, and upon opening the peritoneal cavity the normal gloss of the peritoneum of the bowel was still maintained. I have taken this pus and produced cultures with it, which demonstrated its character, and injected one dram of the pus as removed from the peritoneal cavity into the peritoneal cavity of animals, both with and without mechanical abrasion of the peritoneum, without producing the least unpleasant symptom, and no pathologic lesions were found on making an autopsy.

In cases of general suppurative peritonitis, as a result of appendicitis, that have been under my observation, in which the normal glistening appearance of the peritoneum was present at the time of operation, the patients recovered, and inoculations of the pus into the peritoneal cavity of animals produced no unpleasant symptoms or lesions. When I find that the pus has not abraded the peritoneum, even though the surface of the latter has been covered with the former for a length of time, I consider the case a favorable one.

Note how this contrasts with the appearance in the abdomen when the streptococcus predominates. Here we find that, within a short time after rupture into the peritoneal cavity, the peritoneum in contact with the infectious material is entirely denuded of its endothelium, resembling the condition produced by a cantharides blister. The quantity of pus is always small, rarely exceeding a few drams, with here and there flakes of lymph. The bowel is distended and paralyzed; peristalsis has ceased. Inoculations with this pus produce the same condition; the red and angry appearance of the intestine I now recognize as a signal of the gravest importance, as, practically, all of my cases in which this condition was present terminated fatally.

The septic conditions due to the bacillus coli commune produce about the same physical manifestations as those of the streptococcus. The quantity of material discharged into the peritoneal cavity is of great significance; if it be small the intestines and omentum rapidly circumscribe it and protect the general peritoneal cavity from invasion. If it be large, and if it be irritating and poisonous, it may abrade the peritoneum of its endothelium as boiling water would, quickly, and be followed by a rapid absorption, causing death in a few hours. I have had only one case of this class, in which an abscess of considerable size ruptured into the peritoneal cavity. Within two hours the extreme symptoms of shock were present, and in twelve hours the patient succumbed. If a large quantity of pus of a low septic character be admitted into the peritoneal cavity it may remain in that cavity for days, and produce but slight changes. Finally, from some cause, this material, which had been innocuous, suddenly produces grave conditions and symptoms.

It is a matter of deep-rooted belief that a peritoneum that has been irritated repeatedly by the presence of a tumor, by the close proximity of an accumulation of infectious material, finally attains an increased resistance against infection, *i. e.*, the peritoneum of a patient who has suffered from the presence of a large and movable tumor will tolerate much more manipulation than a perfectly normal peritoneum, and that the peritoneum in the neighborhood of an old circumscribed abscess is more difficult to infect than a healthy peritoneum.

There has been a great difference of opinion as to the symptoms of appendicitis and the relation of the symptoms to the pathologic condition within. This diversity will continue until our power of differential diagnosis is very much increased. From a train of symptoms and signs in the early stage it is impossible to say just what is the exact pathologic condition. We can say, however, that it is a disease of the appendix in some stage of its development.

The symptoms of appendicitis are (1) a sudden pain in the abdomen; (2) shortly followed by nausea and, perhaps, vomiting; (3) local tenderness over the site of the appendix, and most frequently in the right iliac region; (4) elevation of temperature. These symptoms, occurring in this order, without a previous history of genito-urinary infection, or of a lesion of the gall-tracts, or Pott's disease, indicate with almost uniform regularity appendicitis. They do not indicate that the appendix is gangrenous, or that there is a simple catarrhal appendicitis. They do not indicate whether it has perforated or has not perforated; nor whether the cause is an infection with the staphylococcus, the streptococcus, or the bacillus coli commune, or the presence of a fecal stone, or of a foreign body. They do not indicate whether it is a stenosis of the appendix or an appendicitis obliterans, but merely that it is an appendicitis or acute disease of the appendix.

The physical manifestations, the presence or absence of induration, tumefaction, edema of the wall, tympanites, etc., aid in the differentiation of the various pathologic conditions present in the more advanced stage; but all of these are absent or comparatively worthless in the early stage.

The etiology, which was for a long time a subject of contention, is now practically agreed upon. It was very difficult to eradicate from the professional mind the deep-rooted erroneous belief that in a great majority of cases appendicitis was due to foreign bodies admitted into and retained in the appendix, as grape-seeds, cherry-stones, fragments of bone. Only 2 per cent. are cases with foreign bodies, and fecal stone in 38 per cent. To indicate the causes of appendicitis I will use the same classification employed in my article of March 3, 1893:

1. Simple pus-infection, producing the catarrhal variety.
2. Extensive infection by the bacillus coli commune or by pyogenic microbes, producing gangrene of a greater or lesser portion of the appendix.
3. Pressure-atrophy with infection of the appendix (*a*) by fecal concrement, and (*b*) by foreign bodies.
4. Retention-accumulations (*a*) from cicatricial contractions, stenosis, and obliteration, and (*b*) from occlusion by an enterolith or foreign body.

From the reports of autopsies collected I find that in 70 per cent. of the cases there were perforations of the appendix. Of my own cases in which the appendix was removed there was 87 per cent. Simple primary catarrhal appendicitis, if it exists, is rarely brought to the attention of the physician and still less frequently to that of the surgeon. Of 194 cases reported we had but one of this variety. A catarrhal inflammation in which the more serious form of appendicitis had previously existed is not uncommon.

The question of greatest practical importance to the surgeon and physician is the diagnosis. Can we determine when appendicitis is present, and can we determine the pathologic conditions that exist in the abdomen at any given time in the progress of the disease? To the former we must with positiveness answer in the affirmative; to the latter an equally forcible negative must be given; that is, we can say from the symptoms that a lesion of the appendix exists; but we cannot say, in most cases, how extensive, how dangerous, and how far-reaching the effects of that appendicitis may be, and still less can we say in any given case how soon the life of the patient may be greatly jeopardized by the disease which at the moment has apparently no grave danger.

If we were able to determine in the early stage, from the symptoms, physical signs or clinical history of a given case that it is going to take a favorable or an unfavorable course, we would regulate our treatment accordingly. Unfortunately, there are no symptoms present in the dangerous cases admonitory of their fatal termination until the patient has passed beyond the condition in which an operation offers reasonable hope of a recovery. The question to be answered is, When should we operate? The so-called conservative answers: "Operate on the collapsed cases; the cases that present symptoms of fulminating peritonitis; the cases that are taking an unfavorable course; the cases that appear to be progressing rapidly to destruction under medical treatment."

The surgeon must take a positive stand, and answer "No" to each of these rules. It is admitted that 50 per cent. of the fatal cases terminate before the end of the sixth day, many on the fourth, and a smaller number on the second. The surgeons who wait until the sixth day must, therefore, expect to have a mortality of 50 per cent. of all the cases that would die without operation. I believe the proper position for the true, earnest, and advanced medical man is expressed by the eminently scientific and truly conservative physician, Dr. Norman Bridge, in the following words: "Appendicitis is one of the most frequent and dangerous of the inflammatory diseases in or about the peritoneal cavity. We do not know the line between proper medical treatment and the demand for surgical interference, and I rather despair of finding it. The medical man is practically powerless to control the destiny of the patient. It is always a surgical disease, and the mortality should be materially lessened by skilful surgical treatment."

Would you delay operation on a case that is progressing favorably? By that I mean a case in which the temperature is not above 99°, the pulse not above 80, the expression good, the abdomen presenting no alarming signs? No; I have seen cases of this class go to the third, the fourth and the fifth day with all of the most favorable symptoms that could well be imagined, and on the sixth day die. From what? From a suppurative peritonitis that had existed all the time, as shown by the pathologic changes found in the peritoneum.

We have no sign, symptom or combination of signs and symptoms that indicate, with any degree of certainty, suppurative peritonitis in the cavity stage.

It may exist and the free peritoneal cavity contain drams of pus with a temperature of 99°, a pulse of 80, and a good facial expression. Note the following case that occurred in the practice of Dr. James G. Berry:

G. F., aged nineteen, weighed 220 pounds. On the morning of September 8th, after breakfast, he was attacked with a severe pain in the abdomen, followed shortly by vomiting, and the pain and discomfort were sufficient throughout the day to prevent the man from attending to his work. He remained about the same during the night, and the following morning at 10 o'clock, twenty-six hours after the onset of pain, he walked a couple of blocks to the drug-store and consulted the druggist concerning his trouble, who advised him to see a doctor, and he was seen by Dr. Berry at 3 o'clock, and the diagnosis of appendicitis was made. His pulse, when seen by Dr. Berry was 140, and temperature 102°. There was no tympanites; there was increased local tenderness over the region of the appendix; peristalsis was absent; the patient's countenance was good, and he expressed himself as tolerably comfortable. At 4 o'clock, assisted by Drs. Berry and McQuaig, I performed celiotomy. On opening the peritoneum pus flowed out. There were no adhesions whatever between the intestines; the appendix was free; a fecal stone protruded from an opening in the side of the appendix, where it produced pressure-atrophy perforation. The abdominal cavity was sponged; pus was found down in the pelvis; drainage was by gauze. The normal gloss of the intestine was not disturbed in the least by the presence of the pus, and the surface was not even red. The patient made an uninterrupted recovery.

It will be noted that the operation was performed thirty-three hours after the onset of the symptoms, and but a few hours after the patient had been walking in the street with a suppurative peritonitis. What would have been his condition if the operation had been delayed twenty-four or forty-eight hours? The answer is self-evident.

A retention-appendicitis, on the other hand, may produce a temperature of 105°, or even higher, enormous tympanites and a pulse of 140, an anxious facial expression, and all of the so-called classical symptoms of peritonitis, and the peritoneal cavity be free from infection. These are extreme pictures, but they occur.

When should we operate? As we are unable from the signs and symptoms to determine the exact pathologic condition, are we justified in allowing the probability of fatal conditions to continue for such a period of time without action as would place the patient beyond the possibility of rescue even by operative procedure? No! Until such time as the physician is able to determine the exact pathologic condition and danger in the individual case (and, indeed, we must now consider that time far distant), he is not justified at the peril of the patient's life in restraining the surgeon from acting. It must be conceded by all that an operative procedure, in competent hands, is in itself one involving very little risk, while the continuation of the pathologic processes in many cases greatly jeopardizes the life of the patient. There is only one safe position to take, and that is, in every case in which a diagnosis of appendicitis is made the operation should be immediately performed. It is true that many cases can recover without operation; but we cannot differentiate, in the early stages, which cases are going to be the favorable ones. It is further true that the earlier the operation is performed the less the danger to the patient and the greater the ease of removing the appendix. In a great majority of cases, if an operation be performed within forty-eight hours after the onset of the symptoms the appendix is not yet ruptured, and can be removed without pus-infection of the peritoneum, an advantage of which even the boldest surgeon is pleased to avail himself. The following case in the practice of Dr. J. H. Hoelscher is a beautiful illustration of this class:

Date of operation, November 10, 1894. Operator, Dr. J. B. Murphy with Dr. Hoelscher. Diagnosis, appendicitis.

Miss T., aged sixteen, was perfectly well up to 4.30 P.M. November 9th, when she was attacked with pain in the abdomen, which persisted and increased in severity, compelling her to go to bed. She began to vomit at 8.30 P.M., and vomiting and pain continued through the night and up to the time of operation. At 11.30 that night, when seen by Dr. Hoelscher, the temperature was normal. The diagnosis of appendicitis was made. At 8 A.M., November 10th, the temperature was 99.5°, the pulse 90; at 11 A.M., the time of operation, the temperature was 100°, the pulse 110. There was great tenderness over the region of the appendix; but insensitiveness in other parts of the abdomen. There was no tympanites; peristalsis was absent in close proximity to the appendix; the expression was good.

Operation was by the lateral incision. The appendix was covered entirely by visceral peritoneum adherent to the posterior surface of the cecum up on to the ascending colon. The end was enlarged to half-an-inch in diameter, and contained no fecal stones, but was full of pus; gangrene of the mucous membrane was commencing; lymph-flakes existed in the outer wall of the appendix. The appendix was ligated and removed without rupture, the peritoneum sewed over, and gauze drainage inserted. The patient made an uneventful recovery.

In the later stage, if the surgeon is unfortunate enough to be called at that time, when the peritoneum is flooded with pus, and the patient in collapse, it is his duty to perform the operation and give the patient the advantage of the small percentage in his favor in this forlorn condition.

The rule, first, last, and always should be: Operate in every case of appendicitis, promising or unpromising, at the earliest possible moment. What operation shall we perform? The incision should be made a little toward the median line from the highest point of induration, parallel to the rectus; the muscular layer should be separated with the handle of the scalpel parallel to the course of the fibers, as advised by McArthur and McBurney, thus lessening the liability of hernia. The opening must be ample to allow the surgeon to perform the work within with ease. In the early cases the appendix should be removed, as the adhesions are friable and permit of the appendix being readily separated and drawn into the field. The parallel band of fibers on the cecum opposite its mesentery can always be followed to the position of the appendix, and is an infallible guide to its location. If the peritoneal cavity be opened before the abscess is reached, as is always desirable in the early stage, a thorough packing of gauze should be made around the induration to prevent the pus from entering the unaffected portion of the peritoneum. This I consider of very great importance, and I make an effort to enter the peritoneal cavity just to the side of the adhesions, so as to open the unaffected portion of the peritoneal cavity before I open the abscess; in that way the adhesions may be located, and the packing well placed, so as to thoroughly protect the peritoneum before the adhesions are torn.

In the later cases, that is, from the seventh day on, I consider it advisable to open directly into the abscess when adhesions are present, drain the abscess, remove the fecal stone, if one be present, and make no effort to remove the appendix. The appendix in the acute cases should be simply ligated with chromicized catgut; no effort should be made to top-sew it or bury it in the cecum. Occasionally there will be a fecal fistula, but that closes in a very few days itself.

In the cases of appendicitis operated on in the intermediate stage, *i. e.*, between the attacks, a cuff should be made of the peritoneum of the appendix, peeling the peritoneum back one-half inch or more; the muscular layers should be ligated and the cuff drawn back over the stump of mucous membrane and ligated. The pus should be carefully sponged out of the cavity, and no water or disinfecting solutions used; do not waterlog the peritoneum, as it is sufficiently taxed in taking care of the pus without this additional labor. A glass drain and a gauze drain should both be used in all cases in which pus is present at the time of operation or in which there has been a recent attack of appendicitis. The drain can be removed in eight or ten days, as the cavity fills up from the bottom.

This, in short, is an outline of the procedure I follow. All of the minor details cannot be mentioned here. There is no operation in the peritoneal cavity in which the patient's life is so completely in the hands of the operator, in which the errors of doing too much or too little work would be so likely to result fatally, as in the operation for appendicitis, with its multiform and complicated pathologic conditions. The result depends in a very great degree on the extent of the invasion, and the latter upon the period of time that has elapsed since the onset.

In speaking of results, I do not mean the results in recurring appendicitis, the simplest and least dangerous variety of all; I mean the results in all cases, from those of general suppurative peritonitis as a sequence of appendicitis, to those of the simplest catarrhal variety.

There is a growing tendency in the profession to shirk the responsibility of operating when the dangers are great, *i. e.*, to defer operation on the most dangerous cases and advocate operation on the obliterated or stenosing recurrent varieties in which there is the least danger to the life of the patient from the disease. We must not swerve from our obligations to our patients, but should make every effort to rescue them regardless of the praise or condemnation bestowed upon us.

In reporting cases it is the duty of every operator to classify or mention in detail the important or common symptoms of each individual case in a tabulated form, and give an abstract of the history and pathologic conditions, that the analytical mind in reviewing the results obtained by individual operators may be able to explain the cause of success or failure when the operator himself is not able to do so. It is, therefore, the duty of every surgeon in writing on this subject to give sufficient details of his cases to enable the reader to judge whether they were of the grave or mild variety; whether they were all cases of recurrent, simple, adhesive appendicitis, or whether many of them were of the gangrenous, perforative, and malignantly infectious variety, with the peritoneum extensively involved.

I shall endeavor to give a short outline of the various conditions found in operating for appendicitis.

1. When the abdominal wall is infiltrated, and the abscess is opened without opening the unaffected portion of the peritoneum, there may be (*a*) a small circumscribed abscess, with the appendix forming part of the wall; (*b*) a small abscess, with a tract leading to a larger abscess more deeply; (*c*) a large abscess filling the iliac fossa, containing fecal concretions, or a gangrenous appendix floating in the pus, all closed in with firm adhesions. (This condition never exists in the early stage, and in this class of cases the adhesions protecting the peritoneum should never be broken to remove the appendix.) (*d*) There may be multiple abscesses, with no connecting sinuses. This is a comparatively rare condition. In one of my cases a second abscess was not opened, and the patient died of pyemia four weeks later. (*e*) There may be an abscess in the opposite side of the abdomen; it usually appears in the same relative position, to the left anterior superior spinous process, as the abscess does to the right. There is no connecting sinus. It never occurs in early cases, and is more commonly found a week after operation and three or four weeks after the onset of attack, and should be opened and drained.

2. In another class of cases, when the peritoneum is opened and no adhesions to the anterior abdominal wall are found, a circumscribed abscess may be found situated on the posterior wall of the abdomen, the appendix and pus surrounded and walled in by adherent omentum and intestine. This is the most common condition found in the early stage. The location of the abscess may be near the median line near the margin of the pelvis, close to the crest of the ileum, over the kidney posterior to the cecum, or on the margin of the liver, as in two cases. The occurrence of a suppurating appendix on the surface of the liver or adherent to its margin is due to the congenital deformity and malposition of the cecum, so perfectly described by Cushmann, and the distention of the colon with gas does not aid in making a differential diagnosis between appendicitis and cholecystitis. Still, the most frequent location for the appendix is in the neighborhood of the McBurney point. The exact position of the appendix can be found by following the white fibrous bands along the convex surface of the cecum to the base of the appendix. In all of these cases the field of operation should be thoroughly protected by carefully packing with strands of iodoform-gauze, retaining the ends outside. The adhesions are separated, the pus sponged out, and the appendix liberated from its adhesions; a ligature is then placed on the appendix, and one on its mesentery. In all the cases in which the peritoneal cavity is opened directly the appendix should be removed. When the appendix is situated above and behind the cecum, in close proximity to the liver, the induration can be detected behind the cecum, and must be reached by pressing the cecum forward, packing around, and opening the abscess, locating the appendix, and removing it.

3. When the abscess is circumscribed in the pelvis, and the appendix is found hanging over the brim, or attached to the uterus, the tubes, or the ovaries, the appendix is located by following the bands on the cecum; pus should be sponged out, the appendix amputated, and a long glass drain inserted.

4. In another class of cases the peritoneal cavity will be found to contain a large quantity of free pus with no limiting adhesions, and the bowel may be smooth and glossy, not in the least congested or eroded of its endothelium. All of these cases recover. On the other hand, the bowel may have a livid, blistered appearance, entirely excoriated of its endothelium, and very much distended, showing a paralysis of its muscular walls. The great majority of such patients die. In either of the cases stated the appendix may be adherent or free; it is usually perforated and gangrenous. In both, the appendix is located by the fibrous bands on the cecum or by the sensation to touch by its swollen, hard, and enlarged condition; it must not be confounded with the indurated omentum. Extensive drainage, both of glass and gauze, should be employed, and no irrigation.

5. We find a class of cases in which there is a small quantity of pus located around the appendix, with partial adhesions protecting the peritoneum, and with flakes of lymph extending some distance. This condition may be caused by a perforation of the appendix; by gangrene of the mucous membrane, local or general, without perforation; by a simple ulcer of the appendix without perforation; by accumulation and retention of muco-purulent material in the appendix, with only an abrasion of the mucous membrane of that organ.

6. Specific ulcers in the appendix without perforation or infection of peritoneum, as (*a*) tuberculous, of which I have had one case with recovery; (*b*) typhoid, three cases, all recovered. Both of the latter conditions produced all the acute symptoms—pain, vomiting, tympanites, and elevation of temperature. In these cases, when the appendix is located at the time of operation, it will be found very much enlarged at the seat of ulceration, with the distal end distended with accumulation.

7. There is a class of cases in which the canal of the appendix is partially or completely obliterated or stenosis of the canal is produced sufficient to cause retention of material in the distal end, causing recurrent attacks. In one of the cases of this kind

Number of case.	Date of operation. (1894.)	Name, sex, and age of patient.	Operator.	Number of attacks before operation.	Ulcerative appendicitis.	Gangrene of appendix.	Perforation of appendix.	Tuberculosis of appendix.	Appendix non-adherent.	Appendix adherent.	Enterolith.	Time of operation after attack (days.	Recurrence after simple drainage.	Rupture of abscess into urinary blad	Circumscribed abscess; peritoneal cavity not opened.	Abscess intra-peritoneal; peritoneal cavity opened.	Septic peritonitis without limiting or with incomplete limiting adhesions.	General septic peritonitis with no adh	Gen. sept. perit. with incomplete adh	Rupt. of circum. absc. into perit. cavi	Appendicisectomy during attack.	Appendicisectomy between attacks.	Fecal fistula.	Fatal sapremia.	Recovery.	Death: hours after operation.	Sudden pain in abdomen.	Nausea or vomiting.	Local tenderness (increased).	Temperature.	Induration.	Dry septic peritonitis.	Abscess-cavity comm'cating with bow	Remarks.	Case referred by
146	May 18	J. T., M. 50	M.	3	...	...	...	...	...	1	...	10	...	...	1	...	...	...	...	...	...	...	...	...	1	...	1	1	1	100	1	...	...	Abscess close to liver, behind colon.	Dr. Thometz.
147	" 24	C. C., M. 36	"	3	...	...	...	...	...	...	...	11	...	...	1	...	...	...	...	...	...	...	...	...	1	...	1	1	1	99½	1	...	...	...	" Piper.
148	" 26	Mrs. T., 28	"	...	1	1	1	...	1	...	...	11	...	...	...	1	...	1	...	...	1	...	...	1	...	13	1	1	1	103	...	..	...	Moribund at time of operation; did not rally.	" Neal.
149	" 28	L., M. 56	"	...	...	...	...	...	...	...	...	9	...	...	1	...	...	...	...	...	...	...	...	...	1	...	1	1	1	99.6	1	...	...	...	" Schmidt, Otto.
150	" 28	L. W. P., M. 21	"	...	1	...	...	...	1	...	...	2 y	...	...	...	...	...	...	...	...	1	...	...	...	1	...	1	1	1	97.6	...	...	...	Patient in sixth week of typhoid; died two weeks later sup. peritonitis. Post mortem: seat of operation on appendix perfectly healed. Peritonitis from typhoid ulcer not perforated.	" " "
151	June 1	O'H., M. 24	"	...	...	...	1	...	...	1	...	5	...	...	...	1	...	...	...	...	1	...	...	...	1	...	1	1	1	101	1	...	...	...	" Conley, T. J.
152	" 4	A. M., F. 27	"	5	...	1	1	...	...	1	...	3	...	...	...	1	...	...	...	...	1	...	...	...	1	...	1	1	1	101	...	...	...	Abscess so small could not be located before operation.	" Conley, P. H.
153	" 10	N., M. 40	"	...	...	1	1	...	...	1	1	4	...	...	...	1	1	...	...	1	1	...	...	...	...	12	1	1	1	101	1	...	...	Patient a tippler; extremities cold, and pulse weak before oper'n.	" Rohr.
154	July 6	W., M. 50	"	...	...	1	1	...	...	1	...	4	...	...	...	...	...	1	...	...	1	...	...	1	...	34	1	1	1	99	1	1	...	Bowels excoriated; gloss absent.	" Conley, P. H.
155	" 6	A. L., M. 26	"	...	...	...	...	...	...	1	...	14	...	...	...	...	...	...	...	...	...	...	1	...	1	...	1	1	1	...	1	...	1	Abscess had opened into bowel previous to operation.	Alex. Bros. Hosp.
156	" 8	O., M. 45	"	...	...	...	...	...	...	...	...	8	...	...	...	1	...	...	...	...	...	...	...	...	1	...	1	1	1	99½	1	...	...	...	Dr. Conley, T. J.
157	" 9	G., M. 22	"	...	...	..	...	...	...	...	...	4	...	...	...	1	...	1	...	...	...	...	...	...	1	...	1	1	1	99	1	...	...	Patient's extremities and facial expression very bad at time of [operation.	" Thometz.
158	" 19	I. G., M. 16	"	...	...	1	...	...	...	1	1	9	...	...	1	...	...	...	...	...	1	...	...	...	1	...	1	1	1	100½	1	...	...	...	" De Wolf.
159	" 23	T., M. 19	"	1	...	...	...	...	...	1	...	3	1	...	...	1	...	...	...	...	...	...	...	...	1	...	1	1	1	101	1	...	...	Same as case No. 101 in previous report.	" Jennings.
160	" 24	G. G., M. 18	"	...	...	1	1	...	...	1	1	4	...	...	...	...	...	...	1	...	1	...	...	...	1	...	1	1	1	...	1	...	...	...	Alex. Bros. Hosp.
161	" 25	C., M. 28	"	...	...	1	1	...	...	1	...	7	...	...	...	1	...	...	...	...	1	...	...	...	1	...	1	1	1	...	1	...	...	Abscess situated under border of liver and over kidney.	Dr. Verity, W. P.
162	Aug. 6	S., F. 16	"	...	1	...	...	...	1	...	...	2	...	...	...	...	...	...	...	..	1	...	...	...	1	...	1	1	1	104	...	...	...	Appendix very much enlarged; typhoid ulcer.	
163	" 7	McG., F. 42	"	2	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	Canal in appendix entirely obliterated.	
164	" 17	R M. 50	"	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	1	...	1	1	1	98.4	1	...	...	Chill; very large abscess.	Dr. Riching, Rock- [ford.
165	" 24	A. S., M. 22	"	5	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	Drainage; rapid convalescence.	" Hadsel, Elgin, Ia.
166	Sept. 4	M. D., F. 6	"	...	...	1	...	...	...	1	1	4	...	...	...	1	...	..	...	...	1	..	...	...	1	...	1	1	1	100	1	...	...	Enterolith very large.	" Cullin.
167	" 4	J. C K., M. 35	"	...	...	...	...	...	...	.	...	10	...	...	...	1	...	...	...	...	...	...	...	...	1	...	1	1	1	99.5	1	...	...	...	" Whitford. [(Niles.)
168	" 5	W. B., M. 14	"	2	...	1	1	...	1	1	1	5	...	...	...	...	...	1	...	...	1	...	...	...	1	...	1	1	1	99.5	1	...	...	Peristalsis present. Normal gloss on intestine notwithstanding [pus all over.	
169	" 9	A. J., M. 20	"	...	...	1	1	...	...	...	...	6	...	...	...	1	...	...	.	1	1	...	...	...	1	...	1	1	1	103.6	1	...	...	Appendix situated over spine at brim of pelvis.	Alex. Brns. Hosp.
170	" 9	F., M. 19	"	...	...	1	1	...	1	...	1	33h	...	...	...	...	...	1	...	...	1	...	...	...	1	...	1	1	1	102	...	...	...	Pulse 140 at time of operation; peristalsis absent. Appendix opened into cavity without adhesions.	" Berry, J. G.
171	" 11	B., F. 11	"	...	...	...	...	...	...	1	1	7	...	..	...	1	...	...	...	...	...	...	...	...	1	...	1	1	1	99½	1	...	...	...	" Idbert, Indianapolis
172	" 13	M., F. 14	"	...	...	...	...	...	...	...	...	10	...	...	...	1	...	...	1	...	...	...	...	...	..	48	1	1	1	103	1	...	..	Had chill before operation; great pain and tenderness following. Peritonitis continued till death.	" Riley and Berry.
173	" 22	D. D., M. ...	"	11	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	" Conley.
174	" 22	A. E., M. 28	"	...	...	...	...	...	...	...	...	5	...	...	...	...	...	...	...	...	...	...	...	..	1	...	1	...	1	101.5	1	...	...	Worried with pain and tenderness up to day before operation.	" Thometz.
175	" 26	G. T. H., M. 24	"	1	...	...	...	...	...	...	...	6	...	...	...	1	...	...	...	...	1	...	...	...	1	...	1	1	1	103	...	...	...	Peristalsis absent; ap. gangrenous; not perfor.; 1 oz. pus around [appendix.	" James G. Berry.
176	" 27	A. H., M. 8½	"	...	...	1	1	...	...	1	1	4	...	..	..	1	...	...	...	..	1	...	...	...	1	...	1	1	1	100	...	...	...	absent; ap. gang.; perforated.	" Pigall.
177	Oct. 14	J. C., M. 18	"	...	...	...	...	...	...	...	...	9	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	" Harrigan.
178	" 16	C. E., M. 37	"	1	...	...	1	..	..	1	...	21	...	1	...	1	...	...	...	...	...	1	...	...	1	...	1	1	1	98.4	...	..	...	present; " two perfor.; abs. opened into bowel; prev. opr. [1 yr. for abs.	" G.
179	" 21	B. P., F. 21	"	12	1	...	...	1	...	...	...	36 h	...	...	...	1	1	...	1	...	...	...	...	...	1	...	1	1	1	100.5	...	...	...	absent; " covered with flakes of lymph.	" R. Connell.
180	" 23	B. P., M. 27	"	1	...	1	2	...	...	1	3	7 d	...	...	...	1	...	...	...	...	1	...	...	...	1	...	1	1	1	101.7	...	...	...	present; " gang. at enterolith; 2 perfor. located around abd [wall.	Alex. Bros. Hosp.
181	" 30	M. P., F. 16	"	10	...	1	2	...	...	1	...	...	...	...	...	1	...	...	...	...	1	...	...	...	1	...	1	1	1	101	...	...	...	" " " in center; easily shelled out.	Dr. I. C. Herb, P. G. H.
182	Nov. 6	R. A., M. 24	"	7	...	...	...	...	...	1	...	15 h	...	...	...	...	...	...	...	...	1	...	...	...	1	...	1	...	...	...	...	...	...	" " " obliterat'd in 2 places, one at junc. of cecum.	" Bridge, St. Jos. "
183	" 8	C. B., M. 31	"	...	...	1	...	...	...	1	...	5 d	...	...	...	1	...	...	...	...	1	...	...	...	...	24	1	1	1	103	...	...	...	" " " gangrenous; much pus; bad expression.	" McQuaig.
184	" 10	M. T., F. 16	"	...	1	1	...	...	...	1	...	18 h	...	...	...	...	...	...	...	...	1	...	...	...	1	...	1	1	1	100	...	...	...	" " " " in mucous mem. not perfor. and removed without rupt. full of pus.	" J. H. Hoelscher.
185	" 20	C. E., M. 28	"	...	...	1	1	...	...	1	...	3	...	...	...	1	...	...	...	1	1	...	...	...	1	...	1	1	1	99.8	...	...	...	absent; " part. gang. and perfor.; endothelium exfoliated; bowel red, blist.; 2 oz. pus, gauze and glass drain.	Cook County Hosp.
186	" 25	P., M. 10	"	...	...	1	1	...	...	1	1	8	...	...	...	1	...	...	..	...	1	...	...	...	1	...	1	1	1	99.6	...	...	...	" " part. gang.; abscess completely circumscribed.	Dr Linden.
187	" 26	B., F. 9	"	...	...	...	...	...	...	...	...	14	...	...	1	...	...	...	...	...	...	...	...	...	1	...	1	1	1	98	...	...	...	" " abscess opened and drained. [about 1 oz. pus.	" Scholler.
188	" 26	P., M. 22	"	...	...	...	1	...	...	1	1	9	...	...	...	1	...	...	...	...	...	...	...	...	1	...	1	1	1	100	...	...	...	...	" Symon.
189	" 30	W. K., M 10	"	...	...	...	1	...	...	1	1	50 h	...	...	...	1	...	...	...	...	1	...	...	...	1	...	1	1	1	100	...	...	...	" " gangrenous; pin-hole perfor.; large enterolith;	" Hoelscher.
190	Dec. 6	T., M. 17	"	1	...	...	...	...	...	1	..	8	...	...	...	1	...	...	...	...	...	...	...	...	1	...	1	1	1	102	...	...	...	" " located over promontory or sacrum several inches from abdominal wall; packed well and opened.	" Jennings.
191	" 6	M., M. 16	"	3	...	...	...	...	...	1	...	8	...	...	1	...	...	...	...	...	...	...	...	...	1	...	1	1	1	100	...	...	...	" Very large abs. most prominent in left side; opened extra-peritoneal; pus like tuberculous débris.	Alex. Bros. Hosp.
192	" 8	E., M. ...	"	...	...	...	...	...	...	1	...	10	...	...	...	1	...	...	...	...	...	...	...	...	1	...	1	1	1	99.6	...	...	..	" Large abscess not adherent in front; appendix very firm and allowed to remain.	Dr. Eads.
193	" 10	B. S. O'C., M. 52	"	3	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	98.8	...	...	...	Appendix infiltrated, dense; mesentery ½ inch thick, also infiltrated and cut off where the ligature was tied; mucous membrane ecchymotic and swollen; appendix firmly adherent to cecum; could not be bent upon itself without breaking.	" Dr. Dinnen, Fort Wayne.
194	" 15	J. T. S., M. 25	"	1	...	...	...	...	...	1	...	23 h	...	...	...	...	...	...	...	...	1	...	...	...	1	...	1	1	1	102	...	...	...	Wall of appendix very much enlarged: full of pus; mucous membrane gangrenous; ready to perforate.	

there was a fecal stone entirely surrounded by connective tissue, the mucous membrane having been completely destroyed and the canal obliterated in a previous attack; there were no adhesions around the appendix. In many other cases portions of the canal were found obliterated, and in others a stenosis or narrowing of the canal; the latter is the most annoying variety, as there are frequent recurrences of attacks, and the patient is rarely ever free from pain or sensitiveness in that region. As far as I can learn from the literature, the credit belongs to Dr. Henry O. Marcy, of Boston, for being the first to perform the operation of appendicisectomy in the intermediate stage for the relief of this class of cases. The operation was on Dr. Samuel B. Nelson, November 9, 1886, and the report was published in the *Boston Medical and Surgical Journal* at that time. The patient recovered, and left the hospital in eighteen days.

8. *Appendicitis stercoralis.* In this class of cases there is a large accumulation of feces surrounded by mucous or muco-purulent secretion. The attacks of pain are severe and recur frequently. They are usually accompanied by a temperature not exceeding 100° or 100.5°, and vomiting is a very pronounced symptom. The attack resembles one of intestinal retention, as frequently a movement of the bowels cannot be produced for four or five days. The cause of the symptoms of intestinal obstruction has not been clearly explained, but I believe them to be reflex phenomena, as we find exactly the same condition produced in obstruction of the ductus cysticus with gall-stones. The appendix in cases of this kind is very much enlarged at the distal end, small at the proximal end; its mucous membrane is thickened, and it contains a large quantity of hardened feces.

The mortality in my cases, including all grades, and operating on every case of appendicitis, favorable or otherwise, which came under my observation, is 9.6 per cent. The total number of cases operated on to date is 194. The table on the preceding page is a tabulated form of the cases operated on since my publication, March, 1894.

In the literature of this subject I wish to call attention particularly to the contributions, each presenting various phases of the disease to greater advantage than the other, of Kraft, McBurney, Maurice Richardson, Bryant, Shrady, Wyeth, Sonnenburg, Robert T. Morris, Senn, and McArthur.

A Sign of Intestinal Occlusion Due to Incarceration or Torsion.—At the recent French Congress of Surgeons, Gangolphe (*La Méd. Mod.*, No. 83, p. 1292) called attention to the occurrence of a sero-sanguinolent effusion into the peritoneal sac in cases of intestinal occlusion due to strangulation or torsion. He considers the detection of this sign as an urgent indication for immediate surgical interference.

SOME PRACTICAL SUGGESTIONS ON THE TREATMENT OF WOUNDS.

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My object is to offer some practical suggestions, deduced from personal observation, and with special reference to the kind of wounds that occur in the cases colloquially classed as emergency cases.

In *wounds of the scalp*, after carefully preparing the hands, the first steps in treatment are the shaving of the neighboring field and thorough irrigation of the wound with a heated 1 : 2000 solution of mercuric chlorid, using from four to sixteen fluidounces. All foreign bodies should be removed, and the wound should be explored with the finger carefully, seeking the extent of the injury and the amount of damage done to the periosteum or bone. Then further irrigation of the wound with the warm mercuric-chlorid solution should be practised. This, in a measure, will check oozing.

The next step is the control of hemorrhage, which is often profuse, owing to the extreme vascularity of the parts. By following up with a hemostat, a sterilized cotton or gauze sponge wrung out in the mercuric-chlorid solution, the bleeding point or points can generally be located and controlled. This is the most satisfactory mode, and should always be practised in preference to such unskilful and awkward procedures as continued compression (often followed by sloughing), and the uncleanly filling of wounds with substances or solutions having hemostatic properties. Twisting the smaller vessels will satisfactorily close them, but the larger ones must be ligated. Silk is always attainable, is strong and safe, and can be readily sterilized by immersion in boiling water, and hence offers the best ligature-material in the cases under discussion.

The next step is the approximation of the edges of the wound. Although I have never seen sutures, properly applied, used in a scalp-wound to a disadvantage, we may consider them dispensable when there is little gaping, rendering the wound less liable to infection, should there be any laxity in the antiseptic precautions.

As to suture-material, silk again is always readily obtained and easily sterilized, and offers the best all-round material we have. Horse-hair kept in a mercuric-chlorid solution is the most satisfactory suture; but in an urgent case is not always at hand.

The interrupted suture is the best in scalp-wounds, as good apposition can always be obtained. It can be tightened without causing undue puckering, thus mechanically checking any oozing. It is easily removed. I have often tried the subcutaneous suture, but without as good results as with the interrupted. If there is little gaping, as when the wound is in the direction of the muscle-fiber, it can always be dressed, and sufficient coaptation secured either by adhesive strips over sterilized gauze or by some form of collodion dressing. When sutures have been necessary the best dressing is that of collodion, either with iodoform or carbolic acid, or simple collodion. The collodion can be readily removed, even even if tightly adherent, by the application of ether. In three or four days the sutures should be removed and the wound again covered with collodion, giving instructions to the patient to let it wear off.

Bandages can usually be dispensed with, and only in cases with much laceration and contusion are they at all necessary. They are most inconvenient, and many cases of persistent headache are directly attributable to their unnecessary application. The continued compression of a bandage too often exerts a deteriorating influence on the healing-process, and may cause sloughing of the part. Owing to extreme vascularity wounds of the scalp heal readily, show little tendency to slough, or to become infected, except when treated under primeval methods.

If digital examination shows the periosteum to be injured, or its continuity broken, it should be united by a continuous suture of fine silk. If there is much denudation of the bone and overlying tissue the wound should be left open and allowed to heal by granulation, as there is likely to be necrosis and exfoliation of the bone.

The most satisfactory dressing in cases like this is one of iodoform-gauze covered by successive layers of wet mercuric-chlorid gauze, over which is placed a piece of mackintosh to retain the moisture, thus rendering the wound constantly safe from infection, and thus dispensing with continued irrigations, which are extremely painful to the patient. It is hard to conceive of a case, particularly in urban practice, in which a mercuric-chlorid solution, some silk and boiling water are not readily obtainable. These are the sole requisites for aseptic treatment, and with them pus is almost unknown in the healing-process. With these simple precautions the formerly common abscesses of the scalp and their possible frightful results, together with erysipelas, etc., will be eliminated. In fact, in my experience at the Emergency Hospital, where wounds are received under the most unfavorable conditions, often many hours old, I have never seen a case of extensive suppuration beneath any of the several layers covering the cranium.

Wounds of the face are annoying on account of the frequent subsequent disfigurement due to cicatrization or scarification. In suturing wounds about the eyelids the closest apposition should be obtained and the finest suture material used. The sutures should not be tightened, as the slightest puckering about the eye will produce a decided deformity. The tissues of the face are very vascular, and the continuous or subcutaneous suture can be used to an advantage.

Wounds involving the buccal mucous membrane are also prone to produce marked disfigurement, and in suturing, the object is to unite the mucous membrane in such manner that the dividing pink line on the lips shall be maintained in regular continuity. It is of course difficult to keep these wounds clean and aseptic, owing to the entrance of particles of macerated food and saliva, but fortunately the results of such infection seem to be of little consequence, and we can always expect these wounds to do well. Potassium permanganate and hydrogen dioxid are frequently used with seeming benefit as mouth-washes. Attention to the anatomic distribution of the arteries of the scalp and face will always be of advantage, as they are all superficial and can be controlled temporarily by digital compression until a hemostat can be applied.

In extensive wounds of the face one must be wary of subsequent facial palsy, due to severance of the branches of the seventh nerve, and warn the patient of its frequency; thus relieving himself of unjust blame.

We must frequently trust much to granulation and not attempt to draw portions of the surviving tissue together, often with the result of producing marked deformity. A subsequent skin-graft is often of service after granulation is well advanced. If there is much contusion or laceration of the tissues warm boric fomentations are advisable.

Continued boric fomentations offer the best treatment for what is commonly known as black eye. There also seems to be an anodyne property in the heat conveyed to the part in this manner, besides its usefulness in materially reducing inflammation.

The only point I wish to emphasize in treatment of *wounds of the upper extremity* is to avoid compression by bandages, particularly about the elbow-joint, where much swelling must be expected after contused wounds. Circular compression is always dangerous to a limb, and, if a bandage must be applied, the application should be made over two splints, diametrically opposite, thus utilizing lateral compression only. One should search always for the ends of divided or severed muscles, tendons, and nerves, and under no circumstances close a wound until the ends have been united, as retraction is constantly taking place, thus rendering the union more and more difficult. Here again we should use copious irrigation of the warm mercuric-chlorid solution, and, if there is much laceration and contusion, the wet dressing.

In the treatment of *wounds of the fingers* there is seldom any occasion for immediate amputation.

We should save as much tissue as possible, dress the injury with wet mercuric-chlorid dressing; then, after several days, if the extremity shows no signs of vitality, the question of amputation may be considered, although it has been my plan to allow the dead tissue to slough off and the wound to heal by granulation. While this is not a clean, neat procedure, it is entirely safe under strict antiseptic precautions, and invariably saves tissue that is of incalculable value in the case of the fingers. I have had a case of complete severance of a finger by a bread-cutter, and have united the severed portion to the stump by silk sutures, and in a short time had complete restoration of the part. Several of my medical friends have cited similar instances, and I mention them here to impress the value of economy of tissue. It must be remembered that under new methods the old bugaboos of surgery—gangrene, erysipelas and pyemia, are relics of the past, and that in a case like that stated, if satisfactory union did not take place there would be plenty of time for amputation of the vitalized part after several days of observation.

In stab-wounds, or, in fact, in any penetrating *wounds of the chest or abdomen*, the surrounding cuticle should be immediately shaved and scrubbed with mercuric-chlorid solution, and a large, bulky dressing of mercuric-chlorid gauze and sterilized cotton applied. Then, if entrance into either of these cavities is deemed advisable, it can be done safely and in a short time. It is well not to probe here, as the mere act of probing discloses little and may disturb an all-important clot or introduce sepsis.

The same admonition may be made in regard to immediate irrigation, which may disperse a clot and start an alarming hemorrhage which is not easily controlled as in the former instances. We should always strap the chest in wounds of any kind in that locality, and strive to keep the respirations down with successive doses of morphin. It is also well to apply an abdominal binder in wounds of the abdomen and to keep the patient in a supine position. All treatment in this kind of cases is expectant, as any alarming symptoms indicative of internal hemorrhage demand active operative interference. It is well to bear in mind the possible occurrence of secondary hemorrhage, which may happen at any time during the first fortnight, during which time the patient should be kept quiet and treated expectantly.

To summarize: We rely much on the fixation of the chest by adhesive straps, or even by a plaster jacket in wounds of any nature about the thoracic cavity, and likewise with the binder in abdominal cases.[1]

Transfusion is seldom of any avail after the occurrence of extensive hemorrhage, and should be practised only with great caution. External heat by water bottles, or by heated blankets, hypodermic stimulation by strychin sulphate to a maximum of gr. $\frac{1}{10}$, ergot, brandy, digitalis, ammonia, etc., autotransfusion by bandaging the extremities, and rectal injections of a warm saline solution will generally suffice and exert none of the untoward or dangerous effects of the transfusion. It is when these procedures prove of no avail that operative interference is peremptorily demanded, as therein lies the only hope of avoiding a fatal issue.

Bullet-wounds of the extremities should always be thoroughly irrigated and packed with an iodoform-drain, making the drainage complete from the wound of entrance to that exit, if possible. Hemorrhage is not an important factor in bullet-wounds, as the elastic bloodvessels generally escape injury. When, however, there is severance of a bloodvessel it must be sought for or dissected out and ligated. As it may be the main vessel of the limb, the pulse should always be sought below the seat of injury; its absence indicates stimulating treatment, to maintain the vitality of the member, and expectant preparation for amputation if sufficient anastomosis is not established. Here, also, all muscles, tendons, and nerves, should be united as soon as discovered, which may not be till use of the member is attempted.

Relative to the bullet itself, I think we should never make any extraordinary effort to locate it. If, after ordinary probing, it is not discovered, the wound may be allowed to heal by granulation, and if it causes any subsequent trouble, the pressure, pain, etc., will locate it, and it can be readily removed after the original wound has entirely healed.

If signs of suppuration are prominent in the injured member, free incision along the suppurating tract should be made and open drainage established. This, together with the wet mercuric-chlorid dressing or antiseptic fomentations constantly applied, will usually suffice, and amputation for suppuration in a bullet-wound should be a very rare indication. Administration of quinin and stimulation are always indicated to offset the entrance of sepsis systemically.

A limb should always be splinted in which there is an extensive wound of any kind, thus gaining fixation of the parts, and markedly augmenting the efforts toward restoration. In the furtherance of this we need to remember to make the splints wide enough to avoid circular compression. Elevation of the affected member will always ameliorate pain and lessen hemorrhage. The possibility of secondary hemorrhage must again receive consideration.

In treating poisoned wounds the points to be borne in mind are the relief of pain and swelling, which are temporarily severe, and the antidotal treatment of the poison. Anodyne preparations and ammonia-water are efficient in insect-stings. The application of either warm fomentations, or, what seems better, cracked ice, will be sufficient to reduce the swelling.

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[1] The wisdom of this limitation of respiratory movements is demonstrated in a case of rupture of the lung which I reported in THE MEDICAL NEWS, February 24, 1894.

Most venom has been shown to be a decidedly cardiac depressant, and its effect is probably due to a process similar to ptomain-poisoning; hence the use of the intermittent ligature in *snake-bite*, to allow the entrance of the poison gradually, by which means the leukocytes and other like constituents of the blood can combat it successfully, and not be suddenly overcome by it. Stimulation to excess by means of alcohol (always at hand), strychnin, digitalis, strophanthus, or nitro-glycerin, should be practised, and the wound cauterized or excised.

Surcharging the blood with oxygen by inhalations of the pure gas, or by hypodermic administration of some readily deoxidizable substance as potassium permanganate, is a method worthy of trial.

The idea of any one specific as efficient in these cases of venomous bites is unworthy of comment, as the treatment must be conducted on the general principles laid down by observance of the physiologic action of the venom.

In treating *animal bites*, when there is a distinct wound observable, antisepsis should be prominent. The cautery, actual or chemic, is demanded. Many cases reported as hydrophobia are merely examples of general systemic infection from a local focus of sepsis, made possible by some primitive and uncleanly treatment of the original wound. With but few exceptions all such wounds under my observation have been filled with the hair of the dog, soot, ham-fat, and particles of decayed food, and saliva from the mouth of some person who has practised sucking the wound. This is the result of superstition among people presumably intelligent.

The medical consultant should always treat this kind of wound as any other, and be rigid in irrigation and antiseptic dressing.

A word regarding suppurating wounds of long-delayed union. I have found that after using the ordinary stimulating applications without avail a solution of zinc chlorid, forty grains to the fluidounce of water, will bring about the desired effect. In making the application of this solution to the suppurating or sluggish tract or cavity, all the neighboring healthy tissue should be carefully protected from its caustic action.

In a case of laminectomy belonging to Dr. James Kerr, under my observation, and which I reported in the June *Annals of Surgery*, an application of this solution was the means of healing a suppurating tract that had long resisted all treatment.

As to *phlegmons* of the hand or finger, the proper treatment is early incision, curettement, and a wet antiseptic dressing, preferably of warm mercuric-chlorid gauze constantly renewed several times a day.

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THE FILTRATION OF WATER.

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As the water-sheds from which the supplies for our cities are drawn become more and more thickly populated, the danger of pollution of the waters obtained from them will progressively increase. The building of sewers is going on at a rapid rate in all our cities and larger towns, and even in many small villages, and unfortunately it is the too-common practice to discharge them into the nearest water-course, whether it be used for drinking-purposes or not. The water-carriage of sewage into a stream serving as a public water-supply is the most efficient mechanism that could be devised for the dissemination of such diseases as cholera and typhoid fever. Even when sewers do not discharge into a river, a few privies on the bank, or a few overflowing cesspools, have been known to be sufficient to cause a widespread epidemic. And though all patent sources of pollution may be removed if the banks of a river or a lake have a considerable population, an accidental pollution may be followed by disastrous consequences. Thus in Providence, in 1888, an epidemic of typhoid was caused by the careless throwing of slops, containing excreta of a patient, upon the banks of the river from which the water-supply of the city was taken. Though much more than at present might be done to restrain this pollution by legal means, yet it is certain that at the best the danger of polluted waters will increase rather than diminish. The remedy that has hitherto usually been offered by sanitary engineers is to seek a new and a purer source of supply; but this is manifestly impossible in many cases, and in others, while perhaps feasible from an engineering standpoint, the great cost of the improvement would preclude its adoption. There is little doubt that many of our cities make use of water from a source that is more or less contaminated, and that there is little likelihood that these sources will be abandoned. The more practical question is: Is there any good method or methods within our means by which these waters can be improved?

The self-purification of rivers, which was formerly much discussed, we now know is a figment of the imagination, so far as the removal of disease-producing organisms is concerned. For the artificial purification of water a number of schemes have been suggested, and some of them put into quite general practice. Before considering these it should be noted that the improvement desired is the removal of taste, color, odor, dead suspended matter, and microorganisms. The latter is by far the most essential thing, but they are all important. The methods devised for the removal of these objectionable qualities are aëration, sedimentation, and filtration.

The thorough aëration of water, especially when the air is introduced under considerable pressure, is very effectual in removing unpleasant odors and tastes due to gases dissolved in the water. This method of procedure has been strongly advocated by Professor Leeds, of the Stevens Institute, and has been successfully employed in many places in this country. Aëration has been shown to have very little effect in oxidizing the dissolved organic matter, and none at all upon microörganisms.

Sedimentation is of very great value in removing not only the suspended mineral matter, but in getting rid of bacteria as well. For the purpose of freeing water from silt, clay, etc., subsiding reservoirs are in common use, and are often very successful. For the separation of living microörganisms such reservoirs would have to be very extensive, and I do not know that any have ever been built expressly for that purpose.

Filtration is the means that has most commonly been recommended to free water from disease-producing bacteria. As this method removes not only living organisms, but also all suspended matter, more or less of the color, and as it oxidizes a considerable part of the disorganized organic matter, it is the most efficient means of purification with which we are acquainted. There is no doubt that filtration can be relied upon to remove from 95 to 99 per cent. of the bacteria contained in the water applied to the filter, and that this will practically free the water from disease-producing qualities. It has been argued by some, even among the medical profession, that because bacteria are living structures capable of indefinite reproduction, the passage of any through the filter would render the filtration useless; and this would be so if water were like milk or bouillon, a favorable culture-medium for pathogenic microbes. But water is far from that, because instead of furnishing a suitable pabulum, our ordinary surface-waters are inimical to the life of the bacilli of typhoid and cholera. The Massachusetts State Board of Health has shown that typhoid bacilli die in the water of the Merrimac River in about three weeks, and most of them in far shorter time, and under the conditions that prevail in distributing mains all forms of bacteria tend to perish quite rapidly.

When by filtration both suspended matter and dissolved organic matter are largely removed, the water is still more unfavorable for pathogenic organisms, and the few that pass the filter do not live to reach the consumer. These theoretic considerations, as they might be thought by some, are entirely confirmed by the results of practical experience in the filtration of water known to be polluted, and its subsequent supply to a large number of people. The now well-known history of cholera in Hamburg and Altona is, perhaps, the most striking illustration of the value of good filtration. There is not the slightest reason to doubt that Altona would have been devastated far worse than Hamburg if it had not been for her filters. For many years Altona, with its filtered Elbe water, has suffered from typhoid fever far less than Hamburg, for which the water was taken directly from the river. In Berlin, too, the water supplied to the city from the Spree is constantly contaminated with typhoid excreta; but, except when overworked, as they are at times, the filter-beds have kept the death-rate from typhoid fever much lower than it is in Paris, Chicago, and Philadelphia. Typhoid fever has long been a phenomenally infrequent disease in London, and this is believed to be due to the filtration practised by all the water-companies that draw from the Thames and Lea rivers, which are always contaminated by sewage. It has, however, recently been determined that the purification of the London waters is due largely to sedimentation in the storage-reservoirs that are possessed by the different companies. Filtration is not managed as carefully as it should be in London, but the combined processes of sedimentation and filtration are successful in removing from 96 to 98 per cent. of the bacteria present in the river water. The diminution of typhoid fever in Lawrence, Massachusetts, since the filter was put in operation, somewhat more than a year ago, is cited as perhaps the only instance of the practical application in this country of sand-filtration to the removal of disease-germs from a public water-supply. There seems to be no question in the minds of those who have investigated the subject that sand-filtration is capable, when properly managed, of rendering perfectly safe a water that is even very seriously contaminated by specific organisms. But the construction and maintenance of a sand-filter is not so simple a matter as was at one time supposed. The careful investigations of Piefke at Berlin, of Kummel at Altona, and of the State Board of Health of Massachusetts, have determined some of the conditions necessary to success. Thus the rate of filtration should never exceed 2,860,000 gallons per acre per day. The rate in Berlin is 1,716,000 gallons, in Altona 1,859,000 gallons, and in seventeen German cities the average is 2,000,000 gallons. The area of the beds is of course determined by the rate of filtration, but there must be a reserve to allow for the beds thrown out of use for cleaning, repairs, etc.

The reserve recommended by most European engineers is equal to one-third of the area in use. In London the total area of the beds is 0.67 acres for each million gallons filtered daily.

The depth of sand in most Continental filters is about two feet, and this has been found to be as effectual as a greater depth, but owing to the somewhat different contents of our American rivers it has been found in Lawrence that the deeper the sand, up to four or five feet, the better. The pressure of water upon the filter should not be excessive, but the depth of water should be enough to prevent heating in summer and to float the ice off the sand in winter. About four feet constitute a good depth. The flow of water should be regulated automatically, and the filters should also be under skilled observation continually. Daily bacteriologic examinations should be made of the applied and affluent water. The greatest care must be taken in cleaning, which must be done every three or four weeks. The surface of the sand must be disturbed as little as possible, and it must never be allowed to freeze. The efficiency of a sand-filter depends upon a layer of silt and organic slime on the surface of the sand. In order that this layer may be maintained in a state of efficiency very great care and attention to details are required.

Of late years there have been largely employed so-called "mechanical" filters, which make use of a layer of ferric hydroxid or alumina upon the surface of the sand, instead of the "dirt layer," as the Germans call the surface of an ordinary sand-filter. In consideration of the difficulties in the management of sand-filters the City Council of Providence voted to construct a system of these mechanical filters—with this proviso, that it should be approved by the City Engineer, the Commissioner of Public Works, and the Superintendent of Health. After experimenting nearly a year the commission unanimously recommended the construction of such a filter-plant; but, owing to legal difficulties concerning patents alleged to cover the process, the works have not been built. The filter on which our experimental work was done was of the Morrison-Jewell type, and was thirty inches in diameter. It contained a bed of crushed quartz, three feet in depth. The filter was washed by running a reversed current of water through the quartz and at the same time agitating it by mechanical means. Various substances were used to produce the artificial filtering layer on the surface, but commercial aluminum sulphate was found to be the best. One-half grain of this to each gallon of water was sufficient to keep the filter working properly. The calcium carbonate in the water was found to be far more than enough to decompose this, precipitating the aluminum hydroxid upon the sand. Very delicate tests were applied several times each day to the effluent to determine if any of the unchanged sulphate passed through; but it could not be detected, even when the amount added was far greater than that found necessary. A minute portion of the hydroxid in suspension does pass through, but experiments in cities that employ this process show that it is all precipitated in the mains or intervening basins, and no test-reaction can be obtained from water at the taps in the distribution. It is certain that if used in the proper amount, and indeed far in excess of that, none of the aluminum in any form would reach the consumer. It has been thought by some that even the application of such a small amount of aluminum sulphate as one-half a grain per gallon must be harmful; but if the foregoing is correct, and it was substantiated by hundreds of tests, it cannot possibly exert any injurious action. Indeed, if the aluminum all went through the filter it would probably do no harm, for one-half grain of the commercial sulphate will yield only 0.12 grain of the hydroxid, and far more aluminum than that is contained in many, if not most, spring and well waters. I have made careful inquiry at Lakewood and Long Branch, Chattanooga, Atlanta, Newport, and a number of other cities which have used the "alum process," as it is sometimes called, and have failed to elicit any information which would show that the addition of "alum" to the water was unwholesome.

Our experiments showed that the filter was easily managed, and, for removing bacteria as well as for the other purposes of a filter, was more efficient than any other practical method with which we were acquainted. Our bacteriologic tests were made with great care, and for a large number of days hourly samples were taken. The average removal of water-bacteria as given by these tests was 98.7 per cent. Of course, the most satisfactory test of a filter is not the removal of water-bacteria, but the removal of pathogenic forms applied in known amount. We were so situated that it would have been imprudent to use typhoid bacilli, but instead we employed *B. prodigiosus*, which reacts in water much the same as the typhoid bacillus, and is largely used by the Massachusetts State Board of Health in their filter-experiments. The average removal of this organism was 99.8 per cent.

The removal of coloring matter amounted to about 80 per cent. The removal of the "free ammonia" was often complete, and of the "albuminoid ammonia"—dissolved organic matter—was 66 per cent. This is important, as it is much better than can be done with a sand-filter, and the removal of this material by precipitation removed just so much of the pabulum of the microörganisms.

It is very likely that for some cities sand-filters are to be preferred, for when properly managed they do excellent work. But I believe that the best results are more likely to be obtained by the "mechanical" plan, and I therefore urged its adoption by my own city.

CLINICAL MEMORANDA.

A REVIEW OF SIX INTERESTING PATHOLOGIC CASES.

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CASE I. *Miliary tuberculosis; hemorrhage in the brain.*—Jesus V., forty-eight years of age, a Mexican, was admitted to the Arapahoe County Hospital, February 7, 1894, with a history of chronic illness and cough, with recent retraction of the head and delirium. He came under the care of Drs. McLauthlin and Eskridge, who after an extended examination diagnosticated meningeal tuberculosis. Deep coma came on, and on the 10th of February the patient died.

The post-mortem examination revealed the following condition: The patient's body was greatly emaciated. The membranes of the brain were exceedingly anemic. There was a milky-white exudate under the arachnoid, over both cerebral convexities, over the cerebellum on both upper and lower surfaces, along the anterior and middle cerebral arteries, in the anterior perforated space, and in the inter-peduncular space. Over the anterior surface of the pons, near the basilar artery and around the medulla, there were numerous tubercles imbedded in the inflammatory lymph and in the pia covering these structures.

In the left cerebral hemisphere, involving the medial surface and the upper portion of the convex surface of the hemisphere, there was a dark tumor-like mass lying in the quadrate lobe. Its anterior border was just in front of the upper portion of the fissure of Rolando, and the posterior border was at the parieto-occipital fissure. Laterally it extended from the median line outward one inch. Below it did not extend to the lateral ventricle. For a distance of from one-eighth to one-fourth of an inch surrounding the mass on its outer side was a layer of yellow softening. The tumor-mass resembled extravasated blood, with some appearances of a vascular infiltrating glioma. The remainder of the brain-substance was apparently normal. Sections of the hardened tumor-like mass were made, and it proved to be a simple extravasation of blood, due to a cerebral apoplexy.

The left pleura was free, except for some strong adhesions at the apex. The left lung presented a great many disseminated areas of tuberculous consolidation. These were of all sizes and of all shapes. The apex was solid for two inches down. The right pleura presented strong and old adhesions throughout. The upper half of the right upper lobe was completely solidified, and two small cavities were present at the extreme tip, each about three-quarters of an inch in diameter. Many small areas of consolidation existed in the middle and lower lobes of this lung. All presented tubercles. The heart was small, but its muscular tissue was normal in consistency, and the valves were normal. On the inner surface of the aorta there were a number of small calcareous plaques.

The abdominal cavity presented the point of greatest interest. Over the intestines and stomach, over the liver, over the diaphragm, over the spleen, pancreas, and bladder, indeed, following accurately every curve of the peritoneum, there was a grayish-white exudate from one-twentieth to one-sixteenth of an inch in thickness, and which could be peeled off without much difficulty, and in which were imbedded "millions" of miliary tubercles. The appearance as presented to the naked eye was as though a thin pliable layer of rough undressed kid or molded paper-pulp covered the peritoneum. Here and there the intestines were matted together by friable, easily broken down, fibrinous bands. In one square inch of the exudate I counted on its surface a hundred and eight tubercles. If we estimate the surface-area of the peritoneum at ten square feet the number of tubercles in this man's abdomen was 155,520.

In the dependent parts of the abdominal cavity there were three or four ounces of clear serous fluid. Section of the liver, spleen, and pancreas showed these glands to be normal, and no tubercles were found within. The left kidney was normal. The right kidney was likewise normal, except a few small cheesy areas in the cortex, none larger than a grain of wheat. The supra-renals were normal. The spinal cord was not removed.

From the wide distribution of the tubercles in this case it certainly falls under the head of miliary tuberculosis.

CASE II. *Acute croupous pneumonia; empyema; universal pericarditis; myocarditis and aortic aneurysm.*—J. J. G., an American, forty-seven years of age, was at the time of his death under the care of Dr. S. A. Fisk, who, six months before, had diagnosticated an effusion in the left pleura, with probably some tuberculosis of the left lung, and who had had a large amount of serous fluid aspirated at that time. The trouble continuing, empyema was suspected. A sudden onset of inflammatory symptoms occurred just before death, and an acute inflammation of the left lung was diagnosticated. A few days before his death the man spat up some blood, and an hour before he died he remarked that he felt inside his chest as if his blood was pouring out. In the left pleura was found a quart of sero-purulent fluid. Between the upper and lower lobes of the left lung much fresh inflammatory lymph was found. The entire left lung, from apex to base, was found in a state of red hepatization of acute croupous pneumonia. In the lung there were no tubercles and no cavity. The right lung was large, distended, emphysematous, and full of blood. Otherwise it was normal. The pleura was free. The pericardium presented universal adhesions. The cavity was completely obliterated. The adhesions were old, but they gave way to force. The heart-wall was friable and presented a deep reddish-purple color, with some mottling here and there by yellow patches. The endocardium presented large areas of racemose reddening. All of the heart-valves were normal.

From the aorta, just as it was given off from the left ventricle, there arose an aneurysm the size of a big fist, which projected to the left and anteriorly. This was filled with a mass of dark, grumous blood and partly and completely organized clots. The aneurysm had no opening into adjacent structures. The blood which had been spit up came no doubt from the distended vessels of the right lung.

The spleen and pancreas were normal. Both kidneys were large and congested. The liver was deeply congested. The intestines and stomach were normal. The brain and spinal cord were not examined.

The case from a pathologic point of view was certainly a very interesting one. I felt sure that if we had been allowed to examine the brain we would have found a thrombosis. The sudden and rather unexpected death might have been due to true heart-failure, but from the condition of the clot in the aneurysm it is very probable that an embolus was the factor which immediately caused death. What occurred when the man felt his blood pouring out in his chest can only be surmised. As the clot in the aneurysm was very loose when it was examined, it is possible that its separation was occurring when he uttered his cry.

CASE III. *Subacute interstitial nephritis plus an acute parenchymatous and interstitial inflammation, probably "ether-nephritis."*—Charlotte C., thirty-five years of age, unmarried, was admitted to the Arapahoe County Hospital, March 27, 1894, under the care of Drs. McLauthlin and Collins. The history obtained was as follows: Five years ago she began running down, having malaise, frontal headache, leukorrhea, and many uterine reflexes. This condition continued up to her admission into the hospital. Up to six months ago menstruation was regular, but since that time she has menstruated much oftener than she should. On admission, her temperature under the tongue was 96° F., but on the following day it was normal, and it continued so for five days. The urine was carefully examined. Its specific gravity was low, and the amount passed was large, but it contained no albumin. A microscopic examination was not made.

On the sixth day after admission the woman had a temperature of 100°. After consultation and repeated examinations the trouble was diagnosticated as a pus-tube, and celiotomy was advised. The patient had been under Dr. Collins' care before for a partly adherent retroverted uterus.

On April 5th Dr. Collins performed celiotomy, and removed both tubes and ovaries. The left tube contained pus, and the right ovary was badly cystic. After the operation the temperature rose to 102°, then to 104°, and on the day of death to 106.8°. No symptoms of peritonitis were present at any time. The woman went into a state of coma, and died while in that state six days after the operation.

What had caused the patient's death was the question given me to solve. The post-mortem examination showed the following conditions: The abdomen was distended; there was an incision in the median line, below the umbilicus, for a distance of five inches. This cut showed nothing purulent. It had begun to heal throughout. The peritoneum below the cut was a little dark in color, but there was nowhere any evidence of peritonitis. The intestines were distended and projected from the abdominal cavity for about six inches. In the dependent portions of the abdominal cavity there were a few ounces of blood-stained serum. The peritoneum over the uterus, and all through the pelvic basin, was very dark in appearance, a grayish-black, and it was apparently disintegrating. It brushed oft readily under the finger. There was an area the size of a watch on the ileum at the ileo-cecal valve, which was very dark and apparently necrotic, but this was all in the peritoneum, for section showed nothing else to be involved. The uterus was normal and movable. The stumps of the tubes were in good condition. Not a drop of pus, not a thread of fibrin, not an adhesion was found anywhere. The intestines were normal, although distended, and nowhere showed any peritonitis. The stomach was normal except in one or two places where the superficial epithelium was cast off, and where it looked as though there might have been ulcers at one time. The spleen was only one-fourth the normal size. The liver, pancreas, and suprarenals were normal. The left lung and pleura were normal. The right lung showed some catarrhal pneumonia, and much hypostatic congestion in the lower lobe. The pneumonia was principally located at the edges at the base and posteriorly. The pleura of this lung was normal. The pericardium was normal. The heart was small, and showed some fatty deposit over its anterior surface. The endocardium was normal except for slight evidence of inflammation of the mitral valves.

The right kidney showed the medullary portion quite deep in color. Its cortex measured about one-fourth of an inch, and was quite tough on section. The capsule was thickened, and on removal a portion of the cortex was torn away with it. The Malpighian bodies were not distinctly made out, and the tissue of the cortex could be seen to be more firm, dense, and translucent than normal. Section of this kidney showed that in addition to the interstitial process, with some chronic changes in the tubules and tufts, there was an acute inflammation present not only in the epithelial lining of the tubules, as seen by extensive desquamation and casts, but around and about the tubules, where a large array of leukocytes was found in the thickened connective tissue. The left kidney presented but few naked-eye appearances of any trouble, and on section showed nothing marked but cloudy swelling.

The brain and cord were not examined.

Here was a patient who, with an interstitial inflammation of one kidney, was given ether to narcosis for an extensive operation. Her death follows in six days, and an acute inflammation is found in the diseased organ, with no other organ showing extensive trouble.

CASE IV. *Appendicitis; cured tuberculosis.*—John R., a German, twenty-eight years of age, was treated at Davos, Switzerland, by Dr. Carl Ruedi for pulmonary tuberculosis with a great many hemorrhages. Dr. Ruedi said that the blood came from the left lung, and that at the time, five years ago, he could detect no cavity. The man came to Colorado three years ago, and resided at Salida. While under the care of Dr. Maxwell he developed appendicitis, and had had four attacks previous to this one. He refused operation. Five days before his death he developed the attack which was the cause of his death. Dr. Parkhill operated on him, June 7, 1894, and found the appendix perforated and the abdominal cavity partly filled with pus and lymph. The appendix was removed and the abdominal cavity washed out. The man developed septicemia, and died June 9, 1894.

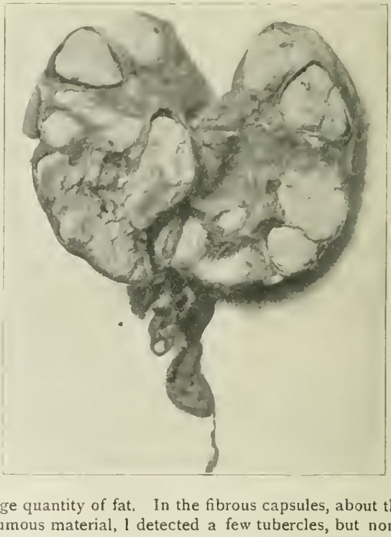
All of the intestines were distended, and lymph and sero-pus were in all the folds of the intestines, even up to the spleen. The omentum was bound down to the pelvic brim on both sides. The stump of the appendix was low down and lay very posteriorly. It was about three-fourths of an inch in length and was in a very softened, semi-gangrenous condition. Old adhesions existed about the colon, evidences of previous inflammations. The spleen was small and cirrhotic; the other abdominal organs were normal, as were the kidneys. The heart was normal. The left lung presented old adhesions at the apex and at the tip of the lower lobe, at which point there was a well-marked, clearly-outlined tuberculous cavity an inch and a quarter in diameter, beautifully isolated and separated from the rest of the lung by a dense fibrous capsule fully a twelfth of an inch thick. It was almost empty, but contained a small amount of cheesy tuberculous material. It was traversed by two or three tiny fibrous bands, and had two or three bronchi opening into it on its inner surface. It showed a few tubercles. The rest of the lung was normal. There was not a single infiltrated area anywhere, and not a tubercle could be found. The right lung was normal throughout. The right pleura presented a few adhesions at the apex and at the base posteriorly. The brain and cord were not examined. Certainly we had here a case in which Nature, aided by our generous climate, had isolated, and had in her own way practically cured a genuine tuberculosis. The bronchi opening into the cavity were large and were so situated as to drain.

CASE V. *Chronic hemorrhagic nephritis; nephrophthisis.*—Robert C., a laborer, forty years of age, born in Denmark, was admitted to the County Hospital, June 13, 1894, in a delirous condition. No history was obtainable, but Dr. Henry Sewall found many bubbling râles in the chest, indicative of pulmonary edema. The pulse ranged from 120 to 128, the temperature from 99.5° to 102°, and the respirations from 36 to 64. A careful examination of the urine showed a small per cent. of albumin. The patient continued delirious and had to be tied down in bed. Treatment directed toward the kidneys failed to produce any results; the patient became comatose, and died June 15th.

Dr. Mack, the hospital resident, stated that the patient had been in the hospital a year before for a supposed tuberculous testicle, which was removed.

The post-mortem was made seven hours after death. The left pleura had a few slender, old adhesions at the apex of the lung. The right pleura was adherent everywhere, but the bands could be broken down with the hands, except at the apex, where they had to be cut. The left lung was greatly edematous, and on section a part in the lower lobe looked as though it was in a state of catarrhal pneumonia, but the part floated on water and presented no elevated and depressed patches, and was, no doubt, simply edematous. The right lung was in the same state as the left, except that at the apex the pleura was thickened for a quarter of an inch. The bronchi in both lungs were filled with edematous fluid, which was blood-stained and frothy. The pericardium was normal. The heart was more than one-half again the usual size. The wall of the left ventricle was greatly hypertrophied, being fully five-sixths of an inch thick. The aortic valves and the aorta were normal. A large white clot was present in the left ventricle and in the aorta. The left heart was found strongly contracted. The mitral and pulmonary valves were normal. The right ventricle was dilated and its walls were thinned for such a large heart. A large, firm, white clot was present in this ventricle. The spleen was normal.

The left kidney was "a revelation." The organ was four inches long, two inches wide, and was buried in a mass of fat. The surface was found raised in rounded elevations the size of a large marble. The color externally was dark and bluish. On section the knife was covered with a white grumous paste, and the same material bulged from the kidney. The capsule of this organ was thickened to one-twelfth of an inch, and could not be removed. Running from the capsule into the kidney were a few thick fibrous bands like the capsule. Every vestige of a renal cortex and medulla had disappeared, being broken down into the whitish-gray, grumous material mentioned. This material was soft, like soft cheese. It could be spread, and would not dissolve in potash or chloroform. It lay in well-formed, fibrous capsules from which it could be easily removed, leaving cosy nests. The fibrous walls about were rather smooth, and, unlike what I expected to find, were not markedly ulcerated. A large mass of the cheesy material occupied the pelvis of the kidney and the beginning of the ureter. The mucous membrane of the pelvis seemed to be normal, though anemic. About the pelvis was a large quantity of fat. In the fibrous capsules, about the grumous material, I detected a few tubercles, but none was present in the capsule of the kidney or in the pelvis. There was no suppuration. Dr. Le Garde examined the cheesy matter for the bacillus of tubercle, but found none. He pronounced the material to be granular débris and fat. He also examined the septa for the bacillus of tubercle, but he found none. From the distinctive naked-eye appearances of the kidney, however, I pronounced it tuberculous. The cheesy mass found was no doubt due to a tuberculous process, probably sec-



ondary to the tuberculous testicle, or possibly had been itself primary. The ureter and bladder were normal, although this examination, I regret to say, was hastily and carelessly made.

The accompanying illustration shows the destruction of the kidney-tissue.

The right kidney was four and a half inches long by two and a half inches wide. The cortex and medulla were separate and fairly distinct. Both the cortex under the capsule and the cortex on section, as well as the medulla, were mottled with white. The section presented light red areas alternating with lighter gray or yellowish-gray areas. The cortex was a little thickened, and a few small hemorrhages were present. The capsule stripped nicely. The pelvis was normal. To the naked eye this kidney presented all of the appearances of chronic hemorrhagic nephritis. The gray or yellow parts corresponded to the anemic or fatty-degenerated portions. Dr. Le Garde reported that the sections revealed parenchymatous and fatty degeneration of the epithelium lining the tubules, with granular infiltration of the interstitial tissue; thickening of the capsule of some of the glomeruli, and complete destruction in places of the uriniferous tubules.

Both supra-renals were cystic. The glands were apparently normal in size, but the parenchyma was lacking, and only a small bit of a semi-fluid brownish material occupied its center. A long observation of the supra-renal glands convinces me that they are often cystic, and that they break down quickly after death, if indeed not before.

The liver, pancreas, stomach, and intestines were normal. The brain and cord were not removed.

The specially interesting pathologic feature in this case was in the left kidney. It was the form of kidney called by the old authorities "scrofulous disease of the kidney," "strumous pyelitis," "scrofulous pyelo-nephritis," and the "inflammatory form of tuberculous disease of the kidney." In reference to the formation of the cheesy material found in it, Morris (in the *International Enclycopedia of Surgery*, vol. v, page 676) says: "Whether these cheesy masses are due to retrograde changes in confluent groups of miliary tubercles, or are the results of degeneration of the products of ordinary inflammation, pathologists are not agreed; some, indeed think that both conditions may exist at once, but that under such circumstances the tubercular process takes precedence of and excites the inflammatory changes." Such being the truth the absence of the tubercle-bacillus need not invalidate our diagnosis.

Case VI. *Chronic parenchymatous nephritis, the inflammatory fatty kidney.*—Thomas W., a laborer, sixty years of age, born in Ireland, was admitted to the County Hospital, June 9, 1894, under the care of Dr. W. J. Rothwell. He had had malaria and dysentery. He was in perfect health in June, 1893, when, while walking on an elevated railroad track in New Mexico, he fell and injured his left leg. He was severely tumbled, and suffered from profound shock. He was taken to a Union Pacific Railroad Hospital, and was there for three months, being delirious much of the time. After he left the hospital he did a little work, but was not strong or well. He progressively ran down in health and became anemic and felt poorly. He came to Denver, and was sent out to the Arapahoe County Poor Farm. Here he began to have occipital headaches and diarrhea.

When the patient was admitted to the hospital he was intensely anemic, and his blood showed a deficiency of hemoglobin. The examination of the urine by the house-interne revealed nothing abnormal. This examination I believe to have been carelessly made.

The diagnosis was thought to lie between carcinoma and pernicious anemia.

On June 18th the patient vomited something that might be called "coffee-ground vomit." Mental apathy then came on, and he died in stupor June 20th. The night before he died the temperature in the axilla was 95°.

The post-mortem examination was made forty hours after death. The right pleura was free of adhesions. The lung floated in a pint and a half of blood-stained serum. The pericardium was normal and contained an ounce of clear serum. The heart was enlarged a third. It was very flabby and had much subserous fat on its anterior surface. All of the heart-valves were normal. Both of the heart-ventricles were dilated. The walls of the heart were friable and thin. The lungs were normal, but exceedingly edematous. Many old adhesions were found over the spleen. This organ was enlarged a half. It was very soft and friable. The left kidney was movable, forward, up to the median line. It lay imbedded in a mass of fat, and was enlarged about a third. It was pale and light in color and the capsule stripped, leaving the outer surface smooth and of a gray-yellowish red color, the yellow being pronounced here and there. The cortex was half an inch thick and showed a yellow faint mottled appearance. The pyramids were more prominent than usual, the red vessels and the yellow tubes being strongly contra-distinguished. No hemorrhage of any size could be detected. The pelvis was normal. The yellow of the cortex was very prominent in places. It was arranged in wedge-shaped masses, with the base at the cortex and the apex at the pelvis. It was a beautiful specimen of the inflammatory fatty kidney. I follow Strümpell's classification of chronic nephritis:

1. Chronic hemorrhagic nephritis, the large variegated or mottled kidney.
2. Inflammatory fatty kidney, the large white kidney.
3. The secondarily contracted kidney.

The right kidney was not movable. It was much more nearly normal than the left one, but its upper half was in the same condition as the left. The liver was large and apparently in a condition of cloudy swelling. All of the other abdominal organs were normal. The supra-renals were cystic. The brain and cord were not removed.

This case showed the value of a post-mortem examination. It had been registered "pernicious anemia" at one time.

POST-MORTEM DEMONSTRATION OF A CASE OF PYEMIA, FOLLOWING A LATENT OTITIS MEDIA.

By S. B. CLARK, M.D.,
of Chicago.

The case reported occurred in a post-mortem examination at the Cook County Morgue, under Dr. Ludwig Hektoen, October 18, 1893. The patient was a man, aged twenty-one, a porter by occupation; of negative family history. He was admitted into the hospital October 21, having been sick about three weeks; he complained of chills, fever, nose-bleed, loss of appetite, and general debility; no cause was given for the sickness, and the man had previously been well. When admitted he was stupid, the skin yellowish, the tongue thick and coated; examination of the lungs and heart was negative; the spleen was not enlarged. The temperature was about normal and the pulse slightly accelerated. On the second day after admittance he had a marked chill, and the temperature rose from 97.5° to 102°. Chills and fever continued in such irregular manner that malaria was suspected, but blood-examination was negative. The pulse was generally over 100, and when the chills came on would rise as high as 140 or more.

On October 8th tenderness and pain developed in the right lung over the region of the mammary gland; there was dulness on percussion, and the respiratory and vocal sounds were somewhat diminished. On October 18th, the apex-beat of the heart was displaced to the left of the nipple-line one inch, in the fifth interspace, and cardiac dulness was increased. The pulse became rapid and jerky, and the patient died in an exhausted condition.

The post-mortem examination revealed the following changes: The body was much emaciated; examination of the abdominal contents was negative, except that there was swelling of the mesenteric glands. The pericardium, with the heart, was compressed and pushed toward the left side by turbid semi-solid fluid in the right pleura, held in by adhesions. The pericardium was also adherent to the left lobe, and in front the pleura was adherent to the sternum by grayish purulent masses. An opening was seen through the left pleura back of the sternum, that communicated with the lung.

In the left pleural cavity were weak adhesions, and a small quantity of turbid, yellowish fluid, in which were solid fibrinous masses. The heart-examination itself was negative.

The right lung showed numerous septic infarcts anteriorly where the pain had been felt. The lobes were adherent, and many yellowish softened areas, with their bases toward the pleura, were easily discernible, of a foul odor, and some of them fused together, containing purulent material. This lung did not float, and when incised showed many yellowish necrotic foci.

The original cause of these many metastatic foci could not yet be accounted for, and we made preparations to examine the brain.

In the meantime the right internal jugular vein, from its commencement at the jugular foramen to the right innominate vein, was found to be in a condition of suppurative thrombo-phlebitis, and contained a semi-solid mass of foul, viscid, purulent material from begining to end.

After the calvarium was removed and the brain taken out, a septic focus was found in the middle ear, and another in the mastoid cells, and leading from this the veins connecting with the lateral sinus were found in a condition similar to the internal jugular.

The lateral and other sinuses of the dura mater were in a suppurative, thrombo-phlebitic condition also.

This readily explained the route of infection, down the lateral sinus to the internal jugular vein, thence through the innominate vein, the superior vena cava, and heart to the lungs.

The autopsy well illustrated how a trifling little abscess of the middle ear, so small as not to be noticed by the patient, may cause the gravest form of pyemia and death.

MEDICAL PROGRESS.

Bilateral Orchectomy for Chronic Hypertrophy of the Prostate.—At a recent meeting of the Allegheny County Medical Society, at Pittsburg, DR. J. D. THOMAS reported the case of a man, sixty years old, who for ten years had had progressively increasing frequency of micturition, so that in urinatiing he was compelled to get upon his hands and knees, thus emptying his bladder by drops. The straining resulted in prolapse of the rectum. A catheter had been used, but the pain was so intense that the practice was abandoned. The urine was neutral in reaction, and contained a large amount of pus. There were two ounces of residual urine. A soft catheter could be introduced without much difficulty, and on rectal examination both lobes of the prostate were found to be considerably and uniformly enlarged. Bilateral orchectomy was proposed, accepted, and performed. Improvement in urination was perceptible within a few days, and continued subsequently without medicinal treatment. The urine could be retained for from two to six hours by day and for two hours at night. Micturition was attended with little pain. On rectal examination the size of the prostate gland was found to have appreciably diminished.

A Mindless Frog.—At a recent meeting of the Association of American Anatomists in New York, PROF. BURT G. WILDER showed a frog from which, under ether, the entire cerebrum had been removed three weeks before. The animal looked natural. The scar on the head was hardly visible. The frog could swim and jump and even balance on a cylinder slowly turned, and could swallow food placed far back in the throat. When undisturbed it sat without motion, and presumably had no consciousness. That such a frog, while in possession of all its senses (excepting smell, the olfactory lobes being removed with the cerebrum), had no intelligence was shown by the behavior of a similar specimen shown the American Neurological Association in 1886. A minnow was put into the mouth. The head reached the throat and aroused the swallowing reflex; but the tail protruded from the lips and caused the frog to put up its hands to push it out. The normal frog would have decided whether the fish should go up or down. The decerebrized animal was a mere reflex machine, and could make no choice between incompatible operations.

A Case of Muscular Dystrophy.—At a recent meeting of the New York Neurological Society, SACHS presented a young woman with all the characteristic symptoms of muscular dystrophy of the facio-scapulo-humeral type. On attempting to show the teeth she was able to move the lower lip slightly, the upper one not at all. There was also loss of power in the eyelids, and the symptoms in the region of the shoulder-girdle were very characteristic. There was distinct hypertrophy of the infra-spinatus and supra-spinatus, and atrophy or partial atrophy of the serratus, the pectorals and the rhomboids. The patient was unable to raise her arm beyond a horizontal position. In excising quite a large piece of the infra-spinatus muscle, a considerable part of the nerve, as it enters the muscle, was accidentally removed. Histologic examination disclosed a great preponderance of fatty tissue, with hypertrophy of some and atrophy of most of the muscular fibers, and distinct evidence of degeneration of the nerve. Decided improvement in the condition of the patient took place. The muscles of the lower extremities were slightly atrophied.

The Protective Influence of the Blood-serum of Convalescents from Diphtheria and of Healthy Individuals.—As the result of an experimental investigation, ABEL (*Deutsche medicin. Wochenschr.*, 1894, Nos. 49, 51) arrives at the conclusion that the blood-serum of many healthy individuals, between the ages of twenty and forty years, who have never had diphtheria, possesses the property of protecting guinea-pigs against infection with diphtheria. It was found that the blood-serum of convalescents from diphtheria did not possess a similar property for the first few days after the cessation of the disease (disappearance of the membrane), but that this property manifested itself in the majority of cases after the lapse of from eight to eleven days, disappearing again at the end of several months, but not in all cases.

The Presystolic Murmur.—At a recent meeting of the Société de Biologie BERNHEIM (*La Médecine Moderne*, 1894, No. 89, p. 1386) contended that the so-called presystolic murmur is in reality systolic, as sphymographic tracings show that a tenth of a second elapses between the systole and the occurrence of the murmur. The murmur also follows the impulse of the heart.

To Stain Nervous Tissue AZOULAY (*Bulletin de la Société Anatomique de Paris*, October, 1894, p. 676) immerses for fifteen minutes sections impregnated with osmic acid in a 10 per cent. solution of tannic acid. The myelin is thus colored black, and the sections may be subsequently stained with carmin.

Sporozoa in Sarcoma.—VEDELER (*Centralblatt für Bakteriologie und Parasitenkunde*, Band xvi, No. 21, p. 849) describes a sporozoon which he found in sections of sarcomata, and which he believes to be the specific cause of these neoplasms.

THERAPEUTIC NOTES.

The Treatment of Diphtheria with the Antitoxin.—Of twenty-four cases of diphtheria treated with the antitoxin by KUNTZEN (*Deutsche medicin. Wochenschr.*, 1894, No. 49, p. 918), recovery ensued in 21 and death in 3. Two cases that came under observation on the first day, 6 that came under observation on the second day, 2 that came under observation on the fourth day, 2 that came under observation on the fifth day, and 1 that came under observation on the eighth day of the disease, recovered. Of 7 cases that came under observation on the third day, 6 recovered and 1 died; 1 that came under observation on the sixth day died; and of 3 that came under observation on the seventh day, 2 recovered and 1 died. Tracheotomy was necessary in 5 cases, 2 of which were fatal. The diagnosis was in all cases based solely on clinical data.

SONNENBURG (*Deutsche medicin. Wochenschr.*, 1894, No. 50, p. 930) reports that from June, 1893, to October, 1894, Behring's antitoxin was employed at the Moabit Hospital in Berlin in the treatment of diphtheria, with two intermissions when the serum was not attainable. These intervals occurred from July 1, 1893, to December 1, 1893, and from April 1 to July 31, 1894. The injections were given immediately after admission, from 600 to 1800 immunity-units being administered, according to the severity of the case. During the period of serum-injections 107 cases were treated, with 85 recoveries (79.4 per cent.); tracheotomy was required in 34, of which 26 recovered (76.5 per cent.); 12 cases were not injected from economic reasons; of these, 6 were mild, and recovered; 6 appeared hopeless, and died soon after admission. Of the 95 cases treated with injections 79 recovered (83 per cent.). In the intervals during which no serum was available, 116 cases were treated; of these 84 recovered (72.4 per cent.); 47 required tracheotomy, with 29 recoveries (62 per cent.). Most of the fatal cases treated with the serum came under observation on the third day, or later. Since October, 1894, prophylactic injections of 60 immunity-units have been made among the brothers and sisters of cases of diphtheria. Of 16 cases thus treated dipththeria developed in two, both of which responded readily to injections of 600 immunity-units, and pursued a mild and favorable course. In one of these cases the disease was probably already present at the time of the prophylactic injection. In the other the attack occurred thirty-seven days after the injection.

At a recent meeting of the Berlin Medical Society, HANSEMANN (*Berliner klinische Wochenschrift*, 1894, No. 50, p. 1126) formulated the conclusion that there is no scientific reason, theoretic or experimental, for considering the antitoxin of diphtheria a specific remedy in the treatment of diphtheria in man. It was contended that the demonstration of any specific curative property of the serum in man had not yet been practically made, and it was pointed out that the agent may, under certain circumstances, act injuriously, exercising a destructive influence upon the blood and causing irritation of the kidneys.

In the discussion, VIRCHOW (*Münchener medicin. Wochenschr.*, 1894. No. 50, p. 1023) related that of 533 cases of diphtheria at the Kaiser and Kaiserin Freidrich Kinderkrankenhaus, 303 were treated with the antitoxin, with a mortality of 13.2 per cent., while among 230 treated with other measures the mortality was 47.8 per cent.

At a recent meeting of the Société Médical des Hôpitaux, MOISARD (*Le Mercredi Médical*, 1894, No. 50, p. 613) reported the employment of the antitoxin during the months of October and November, 1894, in 248 cases of diphtheria, with 34 deaths (14.71 per cent.). In 14 cases an urticarious eruption developed; in 9, a scarlatiniform erythema; in 9, erythema multiforme, and in 1 a purpuric condition.

LE GENDRE (*Médecine Moderne*, 1894, No. 100, p. 1678) related that he had employed the antitoxin in the treatment of 16 cases of diphtheria, with 2 deaths.

LEBRETON (*Ibidem*) reported that during October and November there had been treated at the Hôpital des Enfants 242 cases of diphtheria, with 28 deaths (11.66 per cent.). Deducting cases in which death followed within twenty-four hours of coming under observation, the mortality did not exceed 8 per cent.

SEIZ (*Therapeutische Monatshefte*, 1894, H. xii, p. 605) reports that from July 1, 1893, to the middle of October, 1894, there were admitted to the hospital at Constance 159 cases of diphtheria, mostly of severe grade, 66 of which terminated fatally (41.5 per cent.). Tracheotomy was necessary in 54 cases, intubation in 8. In addition, 134 cases occurred in the city, with 24 deaths (17.9 per cent.). Included in these statistics are 27 cases treated with antitoxin, with a single death. Of these, 20 received injections on the first day; 4, on the second; 1, each, on the first and second, and on the first and tenth days. The fatal case came under observation on the third day, with stenosis of the larynx, and died within a short time.

MENDEL (*Berliner klin. Wochenschr.*, 1894, No. 48, p. 1088) has reported the case of a boy, four-and-a-half years old, in which, on the second day of an attack of diphtheria of moderate intensity, one-thousand immunity-units of Behring's antitoxin were injected, and on the third day an additional six-hundred units. On the seventh day, contrary to instructions, the patient arose from bed, and shortly afterward a generalized hemorrhagic exanthem suddenly made its appearance. A particularly large area of hemorrhage occupied the site of injection. There were, besides, pains in the extremities. The condition slowly receded without relapse, and recovery ultimately ensued. The complication is ascribed to the action of the serum, which, it is known, has a destructive effect upon the red blood-corpuscles, and of which 20 c.c. were employed.

Salicylated-Iron Mixture.—

℞.—Sodii salicylatis	ʒiv.
Tinct. ferri chloridi	fʒiv.
Acidi citrici	grs. x.
Glycerini	f℥iss.
Ol. gaultheriæ	♏ viij.
Liq. ammon. citratis, q. s. ad.	f℥iv.♏

Sol. sec. art. dos. fʒj or f℥ij.

Dissolve the citric acid and sodium salicylate in the liquor ammonii citratis. To the glycerin add the tincture of iron chlorid, and then mix the two solutions, finally adding the oil of gaultheria. One or two drams of mucilage of acacia would be a valuable addition with which to emulsify the oil of gaultheria.

In this prescription reaction takes place between the ferric chlorid and sodium salicylate, resulting in double decomposition, giving iron salicylate in the first solution. Care should be taken to keep the liquor ammonii citratis in slight excess, in order to have a perfectly clear solution of salicylate of iron.

Dose.—One or two teaspoonsfuls.

This prescription is used principally in the treatment of chronic cases of rheumatism or rheumatoid arthritis in which anemia or other evidence of impaired nutrition is a distinct feature. It is likewise employed in acute tonsillitis of rheumatic origin, and in acute articular rheumatism in anemic subjects, especially if the patient has suffered from one or more previous attacks.

The ordinary dose in chronic cases in adults is a dessertspoonful four times a day; in acute cases the same dose is given every two hours until tinnitus is produced or decided amelioration has occurred, when the dose is diminished or the intervals between doses lengthened.—S. SOLIS-COHEN, *Phila. Polyclinic*, vol. iii, No. 32, p. 31.

Recovery from the Ingestion of One Ounce of Chloral Hydrate.—At a recent meeting of the Clinical Society of London, COLENSO (*Medical Press and Circular*, No. 2895, p. 454) reported the case of a very powerful woman, thirty-four years old, of large build and good condition, who deliberately took an ounce of chloral hydrate in solution, being discovered in bed unconscious eight hours later. When seen, an hour and a half after this, the patient was found to be comatose. The reflexes were abolished; the breathing was shallow and stertorous; the pupils small and sluggish; the pulse 130, small and firm; the temperature 100.5°. It was only three hours later that the nature of the poison taken was discovered. Atropin was given hypodermically, and the stomach washed out with much difficulty. Strychnin and ether were injected subcutaneously, and amyl nitrite given by inhalation. When the nature of the poison was learned, enemata of strong coffee were given, and sinapisms applied to the thighs and legs. The woman was also vigorously rubbed and slapped with towels. The treatment was thus continued for several hours, the patient finally being roused. Short intermissions of ten minutes at a time were allowed for sleep, then the patient was taken from bed and made to walk about. On the following day the patient slept thirteen and a half hours of the twenty-four. Recovery ultimately ensued.

The Treatment of Pyrexia.—WHITE (*British Medical Journal*, No. 1768, p. 1096) maintains that hyperpyrexia should be energetically treated with cold baths, while the routine use of antipyretics in ordinary pyrexia is to be condemned. In the cases in which benefit follows coincidently with the reduction of the temperature the means employed has a specific beneficial effect on the particular disease; consequently, the temperature falls at the same time as the other symptoms improve. The means used is only antipyretic in the same sense as mercury is antipyretic in syphilitic fever. Phenazone, acetanilid, and phenacetin should rarely be used as antipyretics.

The Treatment of Scleroderma.—The Vienna correspondent of the *Lancet* (1894, No. 3715, p. 1126) quotes BEER as having reported four cases of scleroderma treated successfully by massage continued for a long period. In one case the treatment was persisted in for a year; in another it was pursued for three hours daily for some months. To overcome the muscular atrophy the faradic current proved useful. One of the patients, who weighed only thirty-two pounds when the treatment commenced, and whose muscles were so atrophied that he could not move his extremities, which were held in a flexed position, recovered, and weighed one-hundred-and-five pounds after treatment for some months.

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SATURDAY, JANUARY 5, 1895.

"HIGHER MEDICAL EDUCATION."

MEDICAL men and all who have studied the problems of medical education, its defects and its needs, will read with interest the little work of DR. WILLIAM PEPPER bearing the above title. Surely no man in this country speaks with more authority on this topic; none has done more in molding latter-day opinion and policy, or in inaugurating and practically aiding important reforms. The addresses which comprise DR. PEPPER'S book were delivered before the medical classes of the University of Pennsylvania on October 1, 1877, and October 2, 1893, the dates respectively of the establishment of the three-year and the four-year course in medicine in that institution; and, though they deal mainly with the problems presented to that school, they apply with equal force to the status of medical education in other centers at the same time, and represent most forcibly the former needs and the later accomplishments in the direction of an ideal system of medical education in America.

The first of these addresses is largely retrospective, reviewing with care the origin of medical teaching on this continent, the high plane on which this was conducted at the outset, and the subsequent falling off from these honorable standards.

The medical school of the University of Pennsylvania, having the distinction of being the oldest medical school on the American continent, was founded in 1765, largely by the efforts of JOHN MORGAN and WILLIAM SHIPPEN, JR., both recently returned from their studies in Edinburgh. The plan of organization was closely modeled after that of the larger European schools, and in particular after Edinburgh. Such candidates only were admitted who had received a collegiate degree or who satisfactorily passed an examination in Latin, mathematics, and natural and experimental philosophy. The course of study led first to the degree of bachelor of medicine when the student had served an apprenticeship to a reputable physician, had attained a knowledge of pharmacy, had attended one complete course of lectures, and had followed the practice of a general hospital for one year. A private followed by a public examination were further requisites. After three years the applicant was granted the degree of doctor when he had written and publicly defended some thesis on a medical subject. It will thus be seen that it was no idle boast of the Trustees that their medical school presented as "liberal and extensive a plan as most reputable European seminaries." In particular, hospital instruction was rendered possible by the inauguration of clinical teaching in the Pennsylvania Hospital in 1760, and in the Philadelphia Almshouse in 1770, and continued an obligatory part of the student's work until 1845.

Unfortunately for medical education, this high plane of excellence cannot be said to have been maintained in subsequent years. The rapid multiplication of schools of indifferent worth and the active competition of these led to a steady lowering of standards until in later years the character of medical education in America was truly deplorable. A comparison of European schools in 1877 with those of our own country illustrates this most forcibly. In the former it will be found the student was required to pursue a regularly graded course of instruction extending over a period of four, five, six, or even seven years; he received personal training in all practical and clinical branches, and he was required to pass an impartial examination by disinterested individuals. It is idle, as DR. PEPPER well observes, to state that the conditions in America did not permit of such advanced and prolonged study, and it was indeed the self-complaisant contemplation of their own excellencies that led men to feel that such a course might produce learned philosophers, but not doctors in any way superior in the setting of a fracture or the contrivance of a potion than those of less rigid education.

What a contrast was presented by the American medical schools! In the first place, no preliminary examination at all was required at matriculation, and the course of study was but two terms of less than five months' duration, with a provision that the student "have attended the practice and been the private pupil of some respectable practitioner," a provision which was notoriously useless and practically inoperative. The course of study was entirely ungraded, so that the new student, without a rudiment of medical knowledge, at once entered upon advanced studies with those about to graduate. Voluntary lengthening of the time of study by the student was therefore scarcely advantageous. Instruction was wholly didactic, saving only the practical work of dissection. Finally, and this perhaps more than anything else led to the pernicious system of medical education, the examinations were conducted and degrees conferred by teachers whose remuneration depended altogether upon the size of the classes.

It was this last grave fault, depending largely on the absence of any supervision by the State and the absence of any system of State examinations, that led to the inordinate number of medical schools and the numerous fraudulent establishments which granted diplomas for small pecuniary considerations, and made the very name of "American Medical Diploma" a reproach in all the world. The number of regularly chartered medical schools was and remains to this day ridiculously large, while the number of "bogus" universities and the extent of their operations can scarcely be determined. Of the regular medical schools following the establishment of that of Pennsylvania in 1765, that of Harvard in 1782, and of Dartmouth in 1797, there were established in the succeeding decades respectively, four, six, three, ten, ten and eight, exclusive of various irregular schools. There were thus in operation at the close of the late Civil War forty-four regular medical schools. In the reactionary period following the war, from 1867 to 1877 inclusive, twenty-one medical schools were organized. At the period of Dr. Pepper's first address there were therefore sixty-five regular schools, and in addition eleven homeopathic, four eclectic and fourteen schools of pharmacy. As druggists largely practised medicine, there were practically ninety-four schools graduating practitioners of medicine, or one to 477,392 inhabitants, whereas in the countries of Europe and generally throughout the world one medical school for about 2,000,000 inhabitants has been found the proper proportion. There were graduated in the year 1876 from the American schools about 3000, or from five to six times the number graduated in Germany, or in Austro-Hungary; four times as many as in France, and almost twice as many as in Great Britain. This inordinate over-production had of course led to an undue proportion of practising physicians to the total population; so that while in all other countries there was one physician to from 1800 to 7000 or even 10,000 inhabitants, in the United States there was one to 600 of population. These evils, with the auxiliary and dependent misfortunes, such as unnecessary multiplication of free dispensaries, the stimulation to quackery in consequence of the lowered standards, and the like, are clearly and eloquently set forth; and with rare foresight (looking at the question from the vantage ground of to-day's accomplished events) Dr. Pepper formulated the lines on which reform must proceed.

These reforms were: The establishment of a preparatory examination; the lengthening of the course to at least three full years; the careful grading of the course; practical instruction at the bedside and in laboratories; and the establishment of fixed salaries for the professors, so that they might no longer have any financial interest in the size of their classes. Clearly as these reforms seem to us to-day desirable and sufficient, only those who have had an interest or a part in the accomplishment of the improvements can adequately appreciate the difficulties which opposed their final adoption. "Here, as elsewhere in education," says Dr. Pepper, "those who desire progress must have a regard for actual conditions and practical possibilities." The University of Pennsylvania had indeed made an effort at reform in 1846 by the establishment of a three-years' course, but it was forced after six years of steady diminution in the size of her classes to abandon this most commendable effort. Subsequently, after years of agitation and at times more acrimonious contention, the lengthening of the course was effected at Harvard in 1871, and later at Michigan, Syracuse, Chicago Medical College, and for a second time at Pennsylvania. During the same years the spirit of progress had effected other changes—examinations at matriculation, rational grading of the courses, and increased length of the academic year. In most of the better schools the old system of remuneration of the professors had been abolished, and practical instruction, so difficult, so costly, and yet so essential, had been made an important part of the curriculum.

All of these changes had been wrought not alone at the expense of much earnest advocacy on the part of men like Dr. Pepper, who saw clearly the need of medical education, but also at no little financial loss incurred by the smaller classes of the first few years. The change, however, was effected, and, with the example of Harvard and Pennsylvania and others, the great body of medical schools were slowly drawn to a similar advance, so that by the time of the second address, delivered on October 2, 1893, of the 118 schools from which information could be obtained, only twenty-three adhered to the two-years' standard and eight had instituted an obligatory four-years' course. In nearly all more or less satisfactory grading of the course of study had been effected. Preliminary examinations at matriculation had been instituted by many, though the rigidity of these might still be questioned. It may very well be urged that the requirement of an academic degree is beyond the present needs of advanced education; but the fault, if fault there be, lies, as Dr. Pepper shows, in the advanced age of our collegiate students. The average age at graduation is now from one to three years beyond that of students in foreign countries at their entrance upon their professional studies; and the age at which the student finally graduates and is prepared to enter practice is unquestionably too advanced. Changes should be effected by which the student may finish his collegiate studies at an earlier age; and an arrangement such as that adopted at the University of Pennsylvania, of admitting students from approved colleges who have devoted a large part of their time to biologic studies to advanced standing in the medical school is highly commendable.

The process of time and the labors and generosity of a few men, seconded by the indorsement of all thinking men of the profession have thus wrought a complete change in our system of medical education. It may be some time before the standard of the leading schools is adopted by others, but the tide has set in this direction, and the public will expect or demand a higher standard from all the schools. In this process some will surely perish, but the excessive proportion of schools to population indicates that this is desirable. Only those can and ought to survive which can offer the student all that practical, clinical, and laboratory instruction that is demanded by the modern systems of medical education. Institutions founded in places where meagerness of population or other causes make this impossible have no right to exist, and will not long continue to do so. All honor is due to the pioneers in this work who have pushed on in spite of temporary setbacks and harsh criticism, and at the greatest cost, this work of higher education. Well, indeed, and with the honest pride of personal contribution, might the learned author of this little work point to the progress and standards of educational advancement no less honorable and elevated than those of our material prosperity, presented to the nations at the time of the great Columbian Exposition in comparison with the conditions at the close of our last great exposition of 1876. During these memorable years no institution did more for the cause of higher medical education than the University of Pennsylvania, and no man more yeoman service than her distinguished guide and ruling spirit, Dr. Pepper.

EDITORIAL COMMENTS.

The Micro-Chemic Reactions of Urinary Sediments.—While the diagnostic significance of the staining reactions of various organic substances has received recognition in both biologic and histologic research, the application of this method of differentiation is capable of extension and elaboration. The schizomycetes, for instance, present such a close resemblance one to another that it is often quite impossible to recognize a given variety from its morphologic appearance. Some can be discriminated by their behavior when exposed to certain stains and decolorizing reagents, while the identity of others is only to be established by their appearance in cultures. Histologically we know that the body and the nucleus of a cell each reacts differently to stains; as do also healthy and diseased structures. Extending the application of the principle, we find that tube-casts in the urine when stained behave diversely in accordance with their chemic constitution, amyloid casts, for instance, assuming a mahogany tint when treated with iodin, and a deep blue when treated with gentian-violet. An interesting contribution to the subject of the color-reactions of urinary sediments has recently been made from the Pathologico-Chemic Institute of the Rudolph-Stiftung in Vienna by Grosz (*Internationale klinische Rundschau*, 1894, No. 41, p. 1465), who has studied the formed elements contained in urine stained with alizarin. To a drop of urine placed on a slide he adds a drop of a 1 per cent. solution of sodium alizarin sulphonate, and then covers, the examination being made after the lapse of about a minute. The sediment present is stained differently according to the reaction of its constituent elements. Thus, those of acid reaction appear yellow, those of alkaline reaction violet, and those of neutral or feebly acid reaction red. In the urine from cases of acute gonorrhea were found cylindroidal bodies of mucin, staining red, and resembling tube-casts, the likeness being increased by the presence of leukocytes and epithelial cells. Further investigation rendered it probable that these bodies (which are not visible in unstained preparations) are derived from the glandular apparatus of the urethra, and more particularly from the glands of Littré. Other long, convoluted, and hyaline cylindrical bodies, upon which are seated isolated leukocytes and epithelial cells, and which appear in unstained preparations as structures of faint contour, are derived from the prostate gland, of disease of which their presence is suggestive. They were also found in the urine passed after coitus. In contradistinction to these urethral and prostatic structures, renal tube-casts stain intensely yellow. The presence of casts is also associated with the absence of a mucoid ground-substance that stains red, and accompanies the other two. In some cases of disease of the posterior portion of the urethra leukocytes stained violet were observed, but the number of cases was not sufficiently large to establish the diagnostic significance of the observation. The opinion is expressed that the reaction of the epithelial cells progresses from acid to alkaline, from the surface to the deeper layers; so that the reaction of the sediment in the urine will indicate the nature and seat of the morbid process in the genito-urinary tract.

The Dangers of Foot-ball.—A danger of foot-ball hitherto unrecognized or disregarded is the occurrence of albuminuria, with the presence of casts in the urine, as a result of the great activity entailed by the violent exercise. A series of interesting observations upon this subject has recently been recorded by MACFARLANE (*Medical Record*, No. 1258, p. 770), who obtained a response to Heller's nitric-acid test for albumin with the urine voided by nine players immediately after a game. On standing for twelve hours there was a heavy sediment in each case and microscopic examination disclosed the presence of urates, crystals of uric acid, calcium oxalate and a large number of casts, some epithelial, a number granular and many hyaline. On examination of the urine of six of the players voided three-and-a-half hours after the game a response to Heller's test was obtained with one specimen, a response to Tanret's test in every instance, and a response to Millard's test in three. On microscopic examination a few casts, mostly hyaline, were found. On another occasion the urine of twenty foot-ball players voided immediately after the game was examined and albumin in considerable quantity found in every instance. In all casts were also found, some granular and hyaline, and in some blood-casts. There were present, besides, many epithelial cells, an abundance of oxalates, urates and crystals of uric acid, and in a few considerable blood.

The question naturally arises whether such conditions can be induced twice or oftener weekly for a considerable length of time without risk of permanent damage to the kidneys, and further whether there is not considerable danger for players already suffering with functional or organic disease of the kidneys.

Food-adulteration from an English Standpoint.—A Parliamentary Committee is seeking light on the extent and nature of food-adulteration and on the methods of preventing it. Several more or less distinguished experts have been examined at considerable length. The evidence is too bulky to be even outlined here, but among the interesting points brought out in the examination of MR. JAMES LONG, a well-known authority in dairy chemistry, was that several brands of condensed, closely skimmed milk (separator-milk) are largely sold in England, generally without due notice as to their insufficiency in fat. MR. LONG regards separator-milk as "unquestionably" nutritious, but naturally deprecates foisting it on the public as whole milk. Another point brought out was that a brand of condensed milk, labelled "Swiss Dairy," and ornamented with a scene in the Alps, is made in Ireland.

The sale of separator condensed milk seems to be much less frequent in this country; at least some analyses made lately for THE NEWS failed to discover any condensed milk notably deficient in fat.

The Transmission of Cholera by Flies.—It has been shown experimentally that flies may act as the carriers of cholera-infection. (See MEDICAL NEWS, March 25, 1893, p. 328.) The recent epidemic at Gaya gaol, in India, furnishes confirmatory evidence upon this important subject. It is related that the first case occurred in a newly-admitted prisoner, who appears to have contracted the disease on his way to the gaol. He occupied successively a number of wards, in each passing several evacuations that were not specially dealt with. The water used was beyond suspicion, and direct proof of the conveyance of cholera-organisms from the excreta to food was wanting. On the other hand, about the gaol were swarms of flies having easy access to both the intestinal evacuations and the food and milk; and bacteriologic examination of specimens of sterilized milk exposed in new vessels, to which flies were permitted access in various parts of the gaol, disclosed the presence of cholera-bacilli.

House-filters vs. Municipal Filters.—We alluded a short time ago to the exhaustive investigation into the efficiency of house-filters, the results of which are still in course of publication by the *British Medical Journal.* It is quite evident from the data furnished, as well as from those reported by other investigators, that wherever a general filtration-system is available it affords the safest means of securing pure water. However anxious the householder may be to obtain a good house-filter there is no certainty of getting one, nor is the maintenance of a filter in proper condition always an easy matter.

The municipality that does not furnish its citizens with an abundant supply of perfectly clear and wholesome water fails in one of the fundamental objects of human society. There will be no market for a house-filter in any city whose affairs are well administered.

For the Boy and His Father.—Every parent has felt the duty of instructing his son as regards sexual matters, especially if he suspects bad habits, and he has also felt the solicitude lest attempted instruction should arouse curiosity when it did not yet exist, and thus do harm instead of good. To steer safely between the double danger has been often tried, and almost as often the attempt has failed. It is an exasperatingly difficult thing to do—in print. In a little monograph (*Temptations, Habits, Character*, Arena Publishing Co.), Dr. Wm. M. Capp, of Philadelphia, has by all odds succeeded better than any previous writer known to us in the task, and we cordially commend the pamphlet to perplexed parents and medical advisers who fear their young men are excited and curious about sexual matters, or that they may be acquiring the morbid knowledge that may lead to vicious and depraved habits.

Typhoid Fever and Creameries.—Some English journals are discussing the danger of the spread of typhoid fever by means of creameries. These are establishments to which many farmers bring milk, which is then mixed, skimmed by centrifugal machines, and the cream made into butter. It is well known that the addition of a small amount of infected material to a large volume of milk or other nutritive fluid is followed by rapid and extensive multiplication of the pathogenetic bacteria; hence, if a single lot of only a few quarts is infected, a wide distribution of disease may take place. The suggested danger is well worth noting, and is another argument for farm-inspection and an indication that the mere analytic control of milk is of minor importance.

Medical Martyrs.—The list of medical men whose lives have been sacrificed in the pursuit of their profession is a long and constantly growing one. One of the most recent additions is that of a young French physician named Masson, who, having been called upon to attend a poor family attacked with typhoid fever, and situated amidst squalid and filthy surroundings, with no one to minister to their needs, himself undertook the task of caring for the patients. He succeeded in making them fairly comfortable, but was attacked with typhoid fever and died. Cases of not dissimilar character must be familiar to many, both within and without the medical profession.

SELECTIONS.

THE BUCCILINGUAL FRAGMENT.

FOR many years it has appeared to the general public that this institution, founded by a man like Ezra Cornell and largely saved by a man like Henry W. Sage, has been conducted by and in the interests of a gigantic sporting fraternity, comprising about one-fourth of all the students. Among them are good men and earnest scholars. Among them also are evidently some who accept the doctrine recently enunciated by the President of Princeton: "I appreciate scholarship as much as anyone, but realize the fact that all of those who go to college do not desire to become fine scholars." From their ostensible vocation, study, they find time for numerous avocations, more or less laudable in themselves, but seldom conducive to scholarship. They are pre-eminently the patrons of inter-collegiate athletics, not so much by playing themselves as by attending games and, until perhaps very recently, betting upon the results. They commonly have plenty of money, not often self-acquired. They contribute liberally to athletic funds; they also, however, demand that others should do the same. They clamor for aid from the antipathetic in paying the salary of a professional trainer, and in the same term spend what would pay that salary many times over for the luxury of witnessing games in distant cities. They convert the college papers into sporting gazettes. They claim to represent the institution before the public. They assume to constitute the "student body," whereas they are merely a buccilingual fragment thereof.—*Prof. B. G. Wilder, of Cornell University.*

CONGRESS AND A NATIONAL BUREAU OF HEALTH.

THE report which the Committee on National Quarantine made to the Academy of Medicine concerning their efforts to get Congress to pass a law establishing a National Bureau of Health furnishes a striking commentary upon Congressional methods. A bill was prepared which received the approval of the medical press, the leading medical authorities, boards of trade, chambers of commerce, the chief newspapers, in short, of the entire body of intelligent and expert opinion of the country; yet the committee which had it in charge could not be induced to report it. One would think that with such an impressive body of public opinion in favor of a a bill the members of the committee would be glad to do all they could to hasten its passage; but scarcely one of them showed the slightest interest in it. What was the reason? We presume that the chief reason was political, and that there was at Washington last year, as there has been every year before since this subject was first broached, a powerful "pull" in favor of the perpetuation of the present quarantine system at New York. That "pull" ought not to be good after January 1st, but we presume it will be useless to hope for any action during this short session. The new Congress ought to show itself more amenable to reason, and ought to be willing to grant the passage of a measure which is in the interest of the health of the whole country.—*N. Y. Evening Post.*

REVIEWS.

A SYSTEM OF GENITO-URINARY DISEASES, SYPHILOLOGY, AND DERMATOLOGY. By VARIOUS AUTHORS. Edited by PRINCE A. MORROW, A.M., M.D., etc. With illustrations. Vol. iii. Dermatology. 8vo., pp. 976. New York: D. Appleton & Co. 1894.

THE third and concluding volume of this work is fully equal in style and appearance, as well as in the quality of the matter contained in its pages, to those which have preceded it. Its subject is one which has been greatly extended by modern research. The editor says in his preface: "A comparison of the table of contents of this volume with that (*sic*) of the text-books on dermatology of a few years ago will show that no fewer than forty diseases are now recognized as clinical entities which were then unknown or identified with other dermatoses."

The classification adopted is practically that of Hebra as modified by Crocker. Perhaps this is as available as any; but it is not without its defects. We find placed among the inflammations a number of disorders in which inflammatory phenomena are by no means essential, but are sometimes almost or altogether wanting, such as varicella, variola, and vaccinia. Herpes should, in our opinion, rank with the neuroses, as should also symmetrical gangrene (Raynaud's disease). And we believe that affections of coccidian origin might properly be placed among those recognized as parasitic.

The material of the article on feigned skin-diseases would be more appropriately, we think, distributed throughout the work in connection with the diagnosis of the special disorders which may be counterfeited.

The authors, twenty-seven in number, have presented the subjects allotted to them in a readable form and in accordance with the generally accepted views of the day. We feel constrained, however, to say that the book, as a whole, is not one adapted for the use of beginners in dermatology, or as a work of reference. It is not in any sense exhaustive or encyclopedic. For physicians who have had some opportunities for the study of diseases of the skin it will serve well as a guide for further reading and investigation.

A very interesting article on leprosy is contributed by the editor, who has had unusual advantages for observation of this disease during a visit paid by him to the Sandwich Islands.

A more uniform and complete system of bibliographic references would have added much to the value of this work. So also would a table of formulæ for the various remedies spoken of in the text. Thus, Lassar's paste (composed of salicylic acid, zinc oxid, powdered starch, and vaselin) is mentioned repeatedly, but we have been unable to find that the formula for it is anywhere stated.

The index is very imperfect. Sometimes the synonyms are given, sometimes omitted altogether. For example, under "hydroa" we are referred to a very brief article on p. 204, chiefly devoted to one form of the disease—the *hydroa puerorum* of Unna; but we are not referred to p. 166, where the term appears as a synonym of dermatitis herpetiformis, and is much more important.

As a rule, the illustrations are remarkably good. We venture to hope that in another edition they may be extended so as to include representations of the micro-organisms which play so prominent a part in many of the affections described.

Physiology for Beginners. By M. Foster, M.A., M.D., F.R.S., and Lewis E. Shore, M.A., M.D. New York and London: MacMillan & Co., 1894.

There was a time, not so very long ago, when the furnishing of text-books in American schools was let out by the job-lot to some one publishing firm which had the necessary political pull, and the professional school-book writer was very much in evidence, ready to write a book on any subject, no matter how foreign to him. Within the last few years a desire for a higher grade of books for school-children has been slowly cultivated, and men of recognized standing in their respective branches are engaged to write such books. Unfortunately the university professor, following his own special line of research, is not always able to descend from his lofty pedestal, from which he lectures to mature men or women, to the needs and comprehensions of small children, and thus it happens that what he writes, in spite of his thorough knowledge of the subject, is not best adapted for primary schools; he arranges the matter treated in the same manner as he presents it to his own students, and not according to the methods of the so-called new education now followed by all competent teachers. Prof. Foster's little book is excellently written and in its present form a very valuable guide for teachers who know the subject thoroughly; but if the different chapters would be rearranged by some up-to-date school-teacher well versed in modern educational methods, and a good complete glossary added to each, the book would increase in value tenfold, and really be a "physiology for beginners," which it is not in its present form. Modern education demands that instruction should proceed from the known to the unknown, that there should be a thought in the child's mind upon which the teacher can build another thought, and a university professor is too prone to forget that a young child, a beginner in the fullest sense of the word, has only one definite and tangible thought in relation to physiology, and that is *food*, not blood, not chemic action.

Practical Urinalysis and Urinary Diagnosis: A Manual for the Use of Physicians, Surgeons, and Students. By Charles W. Purdy, M.D., Queen's University; Fellow of the Royal College of Physicians and Surgeons, Kingston; Professor of Urology and Urinary Diagnosis at the Chicago Post-Graduate Medical School; author of *Bright's Disease and Allied Affections of the Kidneys;* also of *Diabetes: Its Causes, Symptoms, and Treatment.* With numerous illustrations, including photo-engravings and colored plates. 8vo., pp. xiv, 351. Philadelphia: The F. A. Davis Co., 1894.

The time has passed when it was necessary to emphasize the importance of a study of the urine for diagnostic purposes. Perhaps even in a greater degree than physical examination, investigation of the urine is made as a routine practice—for there is danger in resorting to urinalysis only when the symptoms or the very obscurity of a diagnosis suggests such an examination. This contribution of Dr. Purdy's is a useful addition to the literature of urinary examination. It is well and intelligently written, and while taking cognizance of new tests, indorses only those that practical experience has shown to be reliable. The arrangement is a convenient and logical one. The various constituents of the urine, both normal and abnormal are considered successively as to their chemic nature and composition, their source in the economy, the significance of their increase or decrease, the relation of these changes to metabolic processes, food-supply, physical surroundings and tendency toward disease, with the most approved methods of detection and determination. Finally, a concise description is given of the special features of the urine that indicate the existence of special pathologic processes in the economy, together with a brief enumeration of the principal symptoms of each disease, and reference to their nature and etiology. The book is well printed and well made, and measurably free from error. By a strange perversion, the compositor has insisted upon spelling urinalysis "uranalysis."

ATTFIELD'S CHEMISTRY. NEW (14TH) EDITION. CHEMISTRY, GENERAL, MEDICAL, AND PHARMACEUTICAL. By JOHN ATTFIELD, M.A., PH.D., etc., Professor of Practical Chemistry to the Pharmaceutical Society of Great Britain, etc. Fourteenth edition, specially revised by the Author for America to accord with the new U. S. Pharmacopeia. Royal 12mo, 794 pages, 88 illustrations. Philadelphia: Lea Brothers & Co., 1894.

WITH a work so long in favor and so widely known as this, the reviewer can do little else than chronicle from time to time successive editions. The present edition maintains the merits of the work and adheres to the arrangement of subjects that have been so long characteristic of it. It was hardly to be expected that an English chemist would adopt the American spelling of chemic terms, especially in view of the attitude of the present pharmacopeia, but it is certainly to be regretted that reforms in the nomenclature which have been officially advised by an international convention and long adopted by both English and American chemists should be wholly ignored. We find, for instance, "hydrate" used for "hydroxid," "glycerin" for "glycerol," "resorcin" for "resorcinol." We note also the spelling "albumen," instead of "albumin." It certainly seems strange that so able a chemist should persist in using the termination "en," which has no significance in chemistry, in the face of the employment of "in" for all analogous bodies. Albumin is of course classed by our author with casein, fibrin, etc., yet he does not seem to see the incongruity of using a different termination. This is all the more serious because the term "albumen" has a specific meaning in biology.

The work exhibits the excellence in printing and care in proof-reading that are usual with this publishing firm. It will no doubt find ready acceptance, and it will be the duty of the reviewer at no distant period to chronicle the appearance of the fifteenth edition, in which we hope to see some evidence of the effect of the leaven of spelling reform.

SAUNDERS' QUESTION COMPENDS. NO. 24. ESSENTIALS OF THE DISEASES OF THE EAR. ARRANGED IN THE FORM OF QUESTIONS AND ANSWERS. PREPARED ESPECIALLY FOR STUDENTS OF MEDICINE AND POST-GRADUATE STUDENTS. By E. B. GLEASON, S.B., M.D., Clinical Professor of Otology, Medico-chirurgical College, Philadelphia. Surgeon in charge of the Nose, Throat and Ear Department of the Northern Dispensary, Philadelphia. Philadelphia: W. B. Saunders, 1894.

THIS little work is up to the standard of this compend series, yet it is a mistake to occupy too much space in a book of this size with cuts of apparatus and structures with which even the student is familiar. The section devoted to rhinoscopy is good; the same can be said of the portion treating of diseases of the middle ear. In dividing the space for the subjects treated it seems scarcely necessary to devote almost one-seventh of the book to the anatomy of the ear. The illuminating headlight, given as that of the author, is good, yet it is only a modification of the now common electric headlights used. The Hirschmann light answers the same purpose and is practically the same. The book covers pretty thoroughly the subject, and while not presenting much that is new, yet the author's questions are to the point, and his answers are clear and concise.

TEXT-BOOK OF MEDICAL AND PHARMACEUTICAL CHEMISTRY. By ELIAS H. BARTLEY, B.S., M.D., Professor of Chemistry and Toxicology in Long Island College Hospital, etc. Third edition, revised and enlarged, with 84 illustrations. Octavo, pp. 684. Philadelphia: P. Blakiston, Son & Co., 1894.

CHEMIC knowledge must be gained in the laboratory. The teacher and the text-book can only help the student in his studies. Among thoroughly helpful text-books the one before us deserves high commendation, and the fact that it has reached a third edition shows that its value is appreciated. The preliminary sections on physics, the concluding sections on digestion and excretions, with tests for stomach-contents, urine, and feces, add much to its usefulness to students and to physicians. A glossary and a good index complete the list of its merits.

CORRESPONDENCE.

GUAIACOL TOPICALLY AS A PROPHYLACTIC AGAINST DIPHTHERIA.

To the Editor of THE MEDICAL NEWS,

SIR: While admitting the difficulty of estimating the true value of an agent used as a preventive against an infectious disease, I desire to urge upon the profession the topical application of guaiacol as a possible—yes, a probable—prophylactic against diphtheria in the cases of attendants upon diphtheria-patients, and of children and others residing in the same house with diphtheria-patients.

If an excessive quantity is not used, guaiacol may be applied harmlessly, in full strength, even to the throats of children; but for children it is, I think, best to dilute it one-half or two-thirds, according to the age of the child, with olive oil or liquid petrolatum. Very sensitive throats may be previously touched or sprayed with a solution of cocain (from 2 per cent. to 5 per cent.).

The guaiacol, which should be a pure preparation (Merck's is reliable), is best applied with cotton wad, and by quick motion, first to one tonsil, immediately afterward to the other tonsil, and after an interval of two or three minutes to the pharynx. Some burning or smarting is caused by each application. This, however, passes off in the course of a minute or two, or, if unexpectedly severe, may be relieved by ice or iced water. Latterly I have used as a diluent for guaiacol a five per cent. solution of menthol in liquid petrolatum, and the peculiar cooling effect of the inhalation of air after the use of mint seemed to be an advantage. There is no caustic or escharotic effect from pure guaiacol. Impure preparations cause an undesirable eschar more or less opalescent according to the character of the impurity.

The application may be repeated daily or at longer intervals, or not at all, according to circumstances.

Very truly yours,
SOLOMON SOLIS-COHEN.
219 S. SEVENTEENTH ST., PHILADELPHIA.

NEWS ITEMS.

Charcot Memorial.—The pupils and former associates of Charcot in Paris and throughout France are engaged in raising a fund for the erection of a bronze statue of the great neurologist in the Salpêtrière. This movement is now receiving cordial and material support in Germany, in England, and in Italy, as well, of course, as in France.

It has therefore seemed desirable to the Neurological Societies of New York and Philadelphia that the profession in America should join in this testimonial as a tribute to the eminent services of Charcot in neurology and medicine.

For this purpose a committee has been appointed to bring the matter to the attention of the profession and to receive contributions, which will be duly acknowledged and forwarded to the central committee in Paris.

All who desire to contribute to the success of this undertaking are requested to send their subscriptions to the members of the committee nearest them or directly to the treasurer, Dr. C. A. Herter, 819 Madison Avenue, New York, before the first day of February, 1895. The committee is constituted as follows:

For New York: E. D. Fischer, M.D., E. C. Seguin, M.D., M. A. Starr, M.D., C. L. Dana, M.D., C. A. Herter, M.D.
For Philadelphia: S. Weir Mitchell, M.D., Wharton Sinkler, M.D., Chas. K. Mills, M.D.
For Boston: J. J. Putnam, M.D., P. C. Knapp, M.D.
For Baltimore: William Osler, M.D.
For Chicago: Archibald Church, M.D.
For St. Louis: C. H. Hughes, M.D., F. R. Fry, M.D., L. Bremer M.D.
For Montreal, Canada: James Stewart, M.D.
For Rochester: E. B. Angell, M.D.
For Buffalo: J. W. Putnam, M.D.
For Pittsburg: Theodore Diller, M.D.
For Denver: Howell T. Pershing, M.D.
For San Francisco: J. D. Hirschfelder, M.D.

The Philadelphia Neurological Society has voted the sum of $150 as its contribution to the contemplated memorial to Charcot.

Dr. St. John W. Mintzer, who rendered good professional service during the Civil War and who for a time resided and practised medicine in Philadelphia, died on December 26, at his home, China Hall, Bucks County, after a protracted illness, at the age of sixty-two years.

The Dominion Medical Monthly.—Dr. W. H. B. Aikins has withdrawn from the publication of the *Dominion Medical Monthly*, and Drs. J. H. Burns, John Ferguson, G. Sterling Ryerson, A. B. Atherton, and Albert A. MacDonald from the collaborating staff.

F. A. Fluckiger, the distinguished pharmacologist, died recently at Berne, at the age of sixty-six years. His contributions to materia medica and pharmacology were numerous and valuable.

Prof. K. Weil has been made Professor of Surgery in the German University of Prague, in succession to Gussenbauer, elected to the chair formerly occupied by Billroth.

A Special Course in Regional Surgery was begun at the Masonic Hospital of Chicago, by Dr. G. Frank Lydston on January 7th, and will be continued on subsequent Mondays, on the following subjects: "Surgery of the Prostate, Bladder, and Kidneys, including Calculus;" "Appendicitis;" "Surgery of the Rectum and Urethra;" "Varicocele." The course is open to members of the medical profession.

BOOKS AND PAMPHLETS RECEIVED.

Third Annual Message of Edwin S. Stuart, Mayor of the City of Philadelphia, with Annual Report of the President of the Department of Charities and Correction. For the Year ending December 31, 1893. Philadelphia: Dunlap Printing Co., 1894.

Paralysis of the Eye-Muscles of Central and Peripheral Origin. By A. Friedenwald, M.D. Reprinted from the Maryland Medical Journal, 1894.

Beri-beri, with Report of Cases. By J. M. Anders, M.D., Ph.D. Reprinted from the Medical Bulletin, 1894.

The Treatment of Erysipelas. By J. M. Anders, M.D., Ph.D. Reprinted from the Therapeutic Gazette, 1894.

L'Ichthyol dans le Traitement des Urethrites et des Cystites. Par le Dr. Roberto Villetti. Pamphlet. Rome: Imprimerie Innocenzo Artero, 1894.

Ueber die Anwendung des Ichthyol bei Wunddruck der Füsse. Von Dr. Leopold Herz. Aus dem Aerztlichen Central-Anzeiger, 1894.

Psorospermosis Cutis. Von Dr. A. Ravogli. Sonder-Abdruck aus Monatschefte für Praktische Dermatologie, 1894.

Pregnancy after Ventral Fixation of the Uterus. A Report of Four Cases. By George M. Edebohls, M.D. Reprinted from the Transactions of the New York Obstetrical Society, 1894.

Rheumatic Conjunctivitis. By A. L. Hodgdon, M.D. Reprinted from the Maryland Medical Journal, 1894.

Some Reasons for the Performance of Circumcision on all Male Infants. By A. L. Hodgdon, M.D. Reprinted from the American Medico-Surgical Bulletin, 1893.

Diagnostic Palpation of the Appendix Vermiformis. Cases of Appendicitis. By George M. Edebohls, A.M., M.D. Reprinted from the American Journal of the Medical Sciences, 1894.

Thirtieth Report of the Trustees of the Boston City Hospital; with Report of the Superintendent, the Medical and Surgical Statistics, Rules for Admissions and Discharges, Prospectus of Training School for Nurses, Rules for the Convalescent Home, etc., for the Year, February 1, 1893, to January 31, 1894. Boston: Rockwell & Churchill, 1894.

World's Fair. Jamaica at Chicago. An Account Descriptive of the Colony of Jamaica, with Historical and Other Appendices. Compiled under the Direction of the Hon. C. J. Ward, C.M.G., Honorary Commissioner for Jamaica. New York: Wm. J. Pell, 1893.

Chemistry: General, Medical, and Pharmaceutical, Including the Chemistry of the U. S. Pharmacopeia. A Manual of the General Principles of the Science, and their Applications in Medicine and Pharmacy. By John Attfield, F.R.S. Fourteenth edition. Philadelphia: Lea Brothers & Co., 1894.

A Manual of Hygiene. By Mary Taylor Bissell, M.D. New York: The Baker & Taylor Co., 1894.

Transactions of the Texas State Medical Association. Twenty-sixth Annual Session, held at Austin, Texas, April, 1894. Galveston: Knapp Brothers, 1894.

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ORIGINAL ARTICLES.

SYMPHYSIOTOMY, WITH A SUCCESSFUL CASE.[1]

BY W. WINTERBERG, M D.,
OF SAN FRANCISCO, CALIFORNIA.

THE operation of symphysiotomy was first suggested by Pineau in his work on *Surgery* in 1598. La Courvée first performed it on the dead body in order to save the child in the year 1655, and Plenk did it for the same purpose in 1766. In 1777 Sigault first proposed the operation to be done on the living, and Ferrara was the one to carry out practically the proposition; still Sigault is generally considered to be the first symphysiotomist. In the eighty-five operations performed from that time to 1858 there was recorded a mortality of thirty-three per cent., a result which was not very favorable for the dissemination of the operation. It is, therefore, not very surprising to find that with the year 1858 it had practically died out.

It was revived in Italy in 1866, and performed in seventy cases within the following twenty years, with a mortality of twenty-four per cent.

Pinard was the first to follow the example set by the Italians, and in 1892 he performed symphysiotomy for the first time in Paris since its abandonment in 1858, and soon the other European countries followed his example.

In this country, Dr. Coggin, of Freedman, Alabama, now of Athens, Georgia, operated successfully for mother and child only seven weeks later than Pinard. Dr. Barton Cooke Hirst, Dr. Jewett, and Dr. Garrigues were the first operators in Philadelphia, Brooklyn, and New York, respectively. On the Pacific coast the first symphysiotomy was done by Dr. Holmes, of Portland, Oregon; and in California my own case has been the first, so far as I have been able to ascertain.

The purpose for which this operation was originally devised is to deliver a living child *per vias naturales* in certain forms of contracted pelvis in which formerly Cesarean section was imperative to accomplish this end. The question, therefore, obtrudes itself: What are the advantages and disadvantages of this operation as compared with conservative Cesarean section?

In studying the latest statistics of the results of the two operations we find that the danger to the mother is far greater in the last-mentioned than in the first. In Europe, in the hands of the best operators, the maternal mortality has been about ten per cent. in ninety-nine cases of Cesarean section, and in Leipzig there have lately been recorded fifty-four cases with but three deaths—less than six per cent.; but in this country the results have not been so favorable. A table compiled by Dr. Harris, of Philadelphia, shows the following results, beginning only with the year 1887, and omitting the period from 1882 to 1886:

Operations of	No.	Women recovered.	Children saved.
1887	8	5	8
1888	13	5	13
1889	9	6	8
1890	17	13	16
1891	10	7	6
1892	12	9	12
1893	10	6	6
	79	51	69

In a total of 79 operations performed there are 28 maternal deaths, or a mortality of 35.5 per cent. Taking the year 1893 alone, we find four deaths out of ten—a mortality of 40 per cent. This is certainly a frightful mortality, and so much the more discouraging, as there does not seem to be any improvement at all that might have been reasonably expected from an improved technique and a rapid advance in aseptic surgery. As to the infantile deaths, we see by the same table a mortality of about 12.5 per cent.

The earlier statistics of symphysiotomy show a much greater mortality than would have first been anticipated. Thus, Dr. Barton Cooke Hirst, in an address delivered before the Washington Obstetrical and Gynecological Society, November 17, 1893, states that in 212 operations since 1887 there have been 27 maternal deaths, a mortality of 12.73 per cent., while the deaths of the infants raise up their mortality to a little over 28 per cent.

Varnier (*Annales de Gynécologie et d' Obstetrique*, 1893, p. 241) tabulates 124 cases, as follows: Maternal deaths, 12; infantile deaths, 32. Of the 12 mothers lost, 8 died from causes entirely disconnected from the operation; of the remaining 4, one died of septicemia, one of sphacelus of the vulva and vagina, one of cellulitis and peritonitis due to the use of the saw and to forcible introduction of hand and arm in order to effect version; one of hemorrhage, shock of operation, and of lacerations of perineum, vulva, and bladder. Of the infantile deaths, five cases should be eliminated in which the operation had been done in place of embryotomy. Of the remaining 27 deaths, 7 were due to causes not related to the operation, 11 to mishaps with forceps or in version, 7 in succession to incomplete section, 1 to prolonged extraction due to distortion of the right arm, 1 to a cerebral lesion owing to prolonged pressure on the head. The later statistics of Morisani give, in 55 cases, 2 maternal and 2 infantile deaths; and Zweifel (*Centralblatt für Gynäkologie*, 1883, No. 22) reports 14 cases from the Leipzig clinic with favorable results to mothers in all. One child died from asphyxia, and one from pneumonia two days after birth.

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[1] Read before the American Medical Association, at San Francisco, June, 1894.

Puech reports 73 cases, with a maternal death-rate of 4.1 per cent., and 24.6 per cent. of infantile deaths; and Pinard operated in 19 cases, with no maternal deaths; 3 children died, but not directly from the operation. Owing to the rapid spreading of the operation all over the world within the last year it is impossible to compile an accurate statistical table; but the last figures seem to justify the conclusion that the results both to mother and child are rapidly improving, and that as compared with Cesarean section the balance of safety is decidedly in favor of symphysiotomy. Leopold himself, who certainly cannot be said to be prejudiced against Cesarean section, holds that the mortality in this operation is, and always must be of necessity, greater than in symphysiotomy, and the latter operation ought to take the place of the former in all those cases in which it is practicable.

Apart from the greater safety which it gives to the mother, symphysiotomy certainly has the advantage of greater simplicity and easier execution, and it is unintelligible to me how Dr. Barton Cooke Hirst can claim that the lower maternal death-rate is the *only* reason which should make it the operation of election in practicable cases. The much more complicated apparatus necessary for the performance of Cesarean section certainly is an objection to it, as compared with the simple outfit required for symphysiotomy.

It is true that successful Cesarean sections have been performed in former ages with the most primitive instruments, and without any of the paraphernalia that we now think indispensable for the performance of a capital operation, not to speak of trained assistants, or our whole antiseptic apparatus. But, let me ask, is there any one who would feel safe if he had to do a Cesarean section with no more instruments, no more antiseptic apparatus, no more skilled assistants, than are actually necessary in order to perform symphysiotomy? I believe not. If we could treat all our patients in well-managed hospitals, where everything needed for a capital operation is always in readiness, I might concede that the respective outfit necessary to perform either operation did not deserve much consideration; but as long as we sometimes have to operate in out-of-the-way places, with the most unfavorable surroundings, I think it a great help to simplify matters as much as possible; and I think, likewise, that symphysiotomy is the operation that can safely be done with the simplest means. As to the operation as such, it is certainly easier for the operator, and the directly opposite view of some well-known operators to the contrary notwithstanding, I maintain that it requires much more practical experience and surgical skill to perform Cesarean section than symphysiotomy. As a matter of course, every medical man cannot possibly have an opportunity to study the technique of Cesarean section, and it is, therefore, of great value to be in possession of a simple method that will enable us to dispense with the more dangerous, the more difficult, and the more complicated operation in certain well-defined cases of labor, and we all must be prepared to face such cases sooner or later.

Simple, easy, and safe as the operation of symphysiotomy is in itself, it cannot claim these advantages when the question as to the after-treatment arises. This is undoubtedly one of the weakest points of the operation, and it is very likely due to this weakness that Schauta would prefer Cesarean section to symphysiotomy in *private* practice. The management of the case after delivery requires close attention and good nursing, such as are not always to be had outside of hospitals; and I perfectly agree that the after-treatment of a case of Cesarean section is much simpler and easier.

Of some other considerations against symphysiotomy ought to be mentioned the likelihood of serious tears in the anterior vaginal wall, the urethra and bladder, which, of course, are very serious accidents, and should they occur much oftener than they actually do would soon make the operation decidedly undesirable. But I think that with an improved technique we shall soon learn how to avoid these accidents.

The objection that has been raised against symphysiotomy on the ground that the forceps or version may still be required to effect delivery after the operation has been done is hardly serious enough to deserve notice. One might just as well object to Cesarean section on the ground that after opening the abdominal wall there was still another operation left to be done, namely, that of opening the uterus and removing the fetus.

Dr. Barton Cooke Hirst, in the same address referred to before, mentions as considerations against symphysiotomy: the need of good assistants; the absolute necessity of as thorough asepsis as is demanded in abdominal surgery. As to the first of these two points, good assistants are always desirable in every surgical operation; but in my opinion, and to judge from the experience that I have had so far, there are few other operations that could be satisfactorily accomplished with so little assistance as this one. In the case in which I operated myself I was assisted only by my son, a medical student in his second year, Dr. Dodel administering the anesthetic, and still there was no serious difficulty encountered, with the exception that the bed upon which the patient rested broke down toward the latter part of the operation, and I had to finish with the mattress resting on the floor. I do not think that a staff of trained assistants would have prevented this accident. As to the thorough asepsis demanded, I do not think that that should be called an objection, unless we apply it to every surgical case.

It is the duty of every conscientious operator to use all possible means to prevent infection, no matter what operation he may be performing. The same antiseptic precautions that are imperative for a simple case of labor ought to be sufficient for a case of Cesarean section or symphysiotomy. Aseptic surgery, in order to be effective, must be thorough, and there is absolutely no excuse for a relaxation of our vigilance on the ground that we just do not happen to open the peritoneal cavity.

Quite a different objection to symphysiotomy has been raised by Walcher (*Centralblatt für Gynäkologie*, 1893, No. 25), that is, the condition of the symphysis after the operation. He claims that in a number of cases the operation will result in either a loose or an ankylosed joint. The design of the symphysis, according to him, is to form with the sacro-iliac joint an elastic springy connection between the thighs and vertebral column. This is so constructed that the haunch-bones and sacrum do not move in one axis, but that the pelvic planes, *converging* from behind forward, form two coöperating axes, which for the execution of a movement require a sliding of the haunch-bones at the symphysis. If the symphysis be ankylosed, the movement of the sacro-iliac joint is lost. When this occurs the jar in walking will be directly transferred to the spine, a most important point in the movements and carriage of the patient. A loose joint lessens safety. Admitting the correctness of this theory, it is still impossible to agree that the occasional occurrence of either disorder should be taken as a serious objection to the operation. A loose joint will not infrequently result from natural labor; besides, I think that proper care and an improved technique of the after-treatment will altogether do away with this complication. In the great majority of cases reported, union took place in a surprisingly short time, and patients were able to walk with a steady gait as early as three weeks after the operation. As far as ankylosis is concerned, it is difficult to say how this could be prevented. Fortunately it seems to occur very rarely. I have not found a single case of that kind reported in the literature accessible to me.

The fundamental indication for the operation is given by such a disproportion between the head of the fetus and the pelvic diameters that delivery would be impossible without recourse to embryotomy or Cesarean section.

It would lead me too far if I should attempt a detailed description of the different kinds of contracted pelves; and I am sure it would be "carrying owls to Athens," for I am not addressing tyros in medicine now. Suffice it to say that it is principally in those varieties of contracted pelvis which are known as the flat and the rickety flat pelvis in which the operation finds its application. Next to these ought to be mentioned the generally contracted, the kyphotic, and the funnel-shaped pelvis. In the ankylotic pelvis the operation is contraindicated by reason of the immobility of the sacro-iliac synchondrosis.

The availability of the operation depends upon the length of the antero-posterior diameter of the pelvic inlet in the flat and generally contracted pelvis. In the funnel-shaped, as well as in the kyphotic, variety the length of the transverse diameter of the pelvic outlet will furnish the indication. The biparietal diameter of a full-grown child averages 9.25 centimeters, and taking into consideration its compressibility, amounting to about 6 mm., it can be reduced to 88 mm.

Now, supposing we have to deal with the pelvis having a conjugata vera of 67 mm., we must gain sufficient space by the separation of the symphysis for the passage of the head. By different experimenters it has been shown that the increase in length of the conjugata vera is one-fourth of the distance between the pubic bones, so that with a separation of 8 centimeters we should gain 2 centimeters in the antero-posterior diameter. To go beyond this limit would jeopardize the safety of the sacro-iliac joints, as has been clearly demonstrated by repeated experiments. Adding this to the original 67, and taking for granted the statement of Dr. Garrigues, who says that the head enters to the extent of about 6 mm. in the gap, we have a clear gain of 26 mm., which will give a conjugata of 93 mm. for the passage of a head, the biparietal diameter of which may be reduced by compression to 88 mm. This calculation shows that delivery can be easily effected by symphysiotomy when the true conjugate does not measure more than 67 mm. This length is now generally accepted as the lower limit at which the operation is considered feasible. The upper limit is placed at 88 mm. by the majority of operators, while Dr. Garrigues advocates 95 mm. in a flat, and 11 centimeters in a generally contracted pelvis, on the ground that the latter offers the same resistance as a flat pelvis with a conjugate 13.5 mm. (0.5 inch) shorter.

This proposition of Dr. Garrigues is unintelligible. It certainly is paradoxic to talk of a generally contracted pelvis with a conjugata vera of 11 centimeters. The normal length of the true conjugate is 11 centimeters, therefore, with one diameter perfectly normal, a *general* contraction cannot be said to exist in such a pelvis.

It seems to me that taking the measures by Dr. Garrigues as the upper limit would mean to give a larger scope to the operation than it ought to be allowed. By early or so-called prophylactic version, many cases of labor may be terminated safely to mother and child, when the true conjugate is barely 8 centimeters in length, and, therefore, whenever practicable, it ought to be resorted to in preference to symphysiotomy. Still, in my opinion, it would be premature to give a final decision in regard to this point. Possibly, after some time, when the comparative safety of symphysiotomy will have been demonstrated beyond the possibility of a doubt, there may be a change in the opinion of those who caution against a too liberal use of the newly-revived operation.

In the rarer forms of contracted pelves, known as the kyphotic and the funnel-shaped pelvis, we find the principal shortening in the transverse diameter of the pelvic outlet, either alone or combined with a shortening of the antero-posterior diameter; while the pelvic inlet remains normal, or pretty nearly so. It is in this kind of pelvic contraction that symphysiotomy will be more useful and effective than in the varieties mentioned, because of the direct ratio which the increase in the length of the transverse diameter bears to the amount of diastasis of the pubic bones; in other words, every inch of separation means an additional inch in the length of the diameter.

The upper limit for the indication of symphysiotomy in these cases I should place at the same degree of contraction in the transverse diameter of the pelvic outlet that was decisive in the conjugate of the flat pelvis; because the proportion between cephalic and pelvic diameter remains the same, the transverse diameter of the pelvic outlet corresponding exactly to the antero-posterior of the pelvic inlet in a normally-developed pelvis. As to the lower limit, I think it could safely be placed below sixty-seven mm., if such an amount of contraction should ever occur. Supposing we had to deal with a transverse diameter of six centimeters, a diastasis of five centimeters would be sufficient to restore the normal length.

Besides the foregoing there are other indications for symphysiotomy. Thus it has been performed for the removal of a tumor from the pelvic cavity, and has been proposed for impacted mento-posterior face-presentation. Albaran reports a case in which he did the operation successfully in order to facilitate the removal of recurrent epithelioma of the bladder. An abnormally large head would furnish another indication for the operation.

There are two methods of operation in use, the subcutaneous and the open,—the first advocated by Morisani, the second by Pinard. Either method has its advantages and its disadvantages. For the open method it is claimed that one can see exactly what he is doing, and in case of hemorrhage have easier control over it. The subcutaneous method has the undeniable advantage of a smaller wound. I should prefer the subcutaneous method for those cases in which the joint takes a straight course and can be easily divided with the knife, while the open method would be preferable when, in the presence of a zigzag line of the joint or of ossification, the chain-saw would have to be employed. Still, in the absence of a larger experience, I must leave the question *sub judice*.

Leopold and others teach that the division of the subpubic ligament is useless after the joint has been opened, and that therefore this structure ought not to be cut. This may possibly be good practice in cases of flat pelves in which we only have to deal with an abnormally short conjugate, but I fail to see what we can gain by his method in those cases in which the transverse diameter of the pelvic outlet is contracted. It is evident that a separation of the upper ends of the bodies of the pubic bones, while the lower ones are still being firmly held together at the vertex of the pubic arch by the subpubic ligament, could only result in a further approximation of the tuberosities of the ischium, if they could follow the strain brought to bear upon them by a forcible separation at the upper end, and therefore I think that these cases imperatively demand the division of the ligament. Besides, general experience seems to contradict Leopold's view.

The patient is to be placed in the lithotomy-position, with the flexed thighs gently abducted, and then an incision of variable length is made, according to the method chosen for the operation. For the subcutaneous, a longitudinal incision three or four centimeters in length is made in the median line, terminating about one centimeter above the symphysis. After the division of the pyramidalis muscle the finger is introduced to the lower end of the symphysis, and under its guidance the joint is cut through with a probe-pointed bistoury, from behind forward and from below upward. For the open method the incision is begun about two centimeters above and in front of the symphysis, is carried down to the root of the clitoris, or is made to deviate to the left of that organ and continued into the vulva between the labium majus and minus. The joint may then be opened by cutting from without inward and from above downward, or in the manner described. The wound in either case ought to be well protected with a pad of iodoform-gauze. After delivery, which may be effected by expression or the forceps, the wound ought to be carefully closed by close silkworm-gut sutures (which ought to be passed deeply enough to include the sinewy tissue in front of the pubic bones) and covered by an occlusive dressing.

During the act of severing the subpubic ligament the hip-bones ought to be well supported, lest separation take place too suddenly. If this is neglected, the pubic bones will suddenly be thrown widely apart with an audible sound, and laceration of adjoining structures may easily take place. A catheter in the bladder will be useful in keeping it out of harm's way. I am very much inclined to think that the omission of these very important precautions has been the cause of a number of accidents so far reported.

As far as suturing the bones with silver wire is concerned, as recommended by some surgeons, I think it objectionable on the ground that in case of a possible future operation these very sutures would increase the difficulty of opening the joint; besides, it seems to be the consensus of the majority of operators that union will readily take place without any bone-suturing. To facilitate this union a tight bandage may be passed around the hips, the limbs brought together and the patient placed on a so-called trough-bed, as suggested by Dr. Robert L. Dickinson, of the Long Island College Hospital, and described in the *Medical Record*, 1893, vol. lxiv, No. 22. A long and moderately hard pillow is placed on each side of the mattress, over which is spread a rubber sheet and other sheets above it. On this trough the patient will lie in such a fashion that the weight of the lower part of the trunk and thighs is received on the iliac crests and trochanters. The legs are rotated inward, the knees pressed together, and the tendency to separation of the symphysis is overcome, as it occurs when the weight of the body is borne on the sacrum.[1]

The principle on which this simple device is planned is certainly excellent, although there is room for certain modifications in the arrangement of the practical details of the apparatus. Thus, I should suggest the use of wedge-shaped upholstered cushions with an inclination of about 45°, which could be fastened on a light wooden frame in such a fashion that they could not be shifted in a lateral direction by the weight of the patient, according to whose size the distance between the two sides should be regulated. In this way the patient could be lifted or entirely removed from the bed without causing the least motion in the pelvic joints.

Dickinson, in the article referred to, calls attention to the fact that in his case the peritoneum and bladder pouched into the wound, and proceeds to show at what stages of labor this complication was likely to occur. From a study of frozen sections of women who died late in pregnancy, and at different stages of labor, as given in *Braun's Atlas of Topographic Anatomy*, and in *Barbour's Atlas of the Anatomy of Labor*, we come to the following conclusions:

The structures found behind the joint will be:

(1) Before full dilatation and a certain degree of descent: The peritoneum and bladder in the cavum Retzii.

(2) After full dilatation and some descent: The lower part of the bladder and urethra firmly pressed against the joint.

(3) After delivery: The peritoneum and bladder.

The bloodvessels that are located behind the lower part of the symphysis in the cavum Retzii will be found beneath the arch during labor, and, with few exceptions, after delivery they are still in the same position.

The practical conclusion to be drawn from these anatomic facts is that we must expect to find the bladder and peritoneum behind the joint in all cases in which the conjugata vera is shortened, in consequence of which the head cannot engage in the pelvis, and in which full dilatation has not taken place, while in those cases in which the head has descended in the true pelvis, but cannot be born, owing to a contraction of the pelvic outlet, the peritoneum and upper part of the bladder are pushed above the symphysis, and only the lower portion of the latter with the urethra are in close apposition with it. It is evident that under these conditions there is greater danger of wounding any of these organs than in the first-mentioned cases, in which the peritoneum and bladder could be easily held out of harm's way with the finger. The clitoris may be lacerated by a sudden separation of the joint because of the attachment of its crura to the rami of the pubes and ischium, an accident that would be followed by troublesome hemorrhage, and, therefore, great care ought to be exercised to prevent the occurrence of this mishap.

I am unable to explain the presence of bloody urine, which has been observed in some instances after symphysiotymy, without advancing the theory that laceration of the mucous membrane of the deeper portion of the urethra may take place in consequence of violent stretching of this canal. If it were caused by an incised wound in the bladder, extravasation of urine in the pelvic tissues would naturally complicate the accident.

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[1] There is a little room for the bed-pan to be slipped beneath the patient while the inward pressure still continues.

In order to illustrate the various ways in which the operation may be complicated I shall cite a few cases taken at random from the accessible literature:

In *Centralblatt für Gynäkologie*, 1893, No. 5, page 81, Krassowsky reports a case of symphysiotomy in a deutipara with a conjugate of eight centimeters, in which there was considerable hemorrhage from the cavernous body of the clitoris; the right iliac synchondrosis was heard to rupture; cystitis followed; there was slight mobility of the symphysis after recovery.

Smyly (*British Med. Journal*) reports a case in which the bones, separating rapidly, tore the soft parts beneath the urethra; the laceration was repaired with catgut; besides a bedsore a urinary fistula developed, which was cured by a second operation.

Kein (*Gazette de Gynécologie*, 1893, No. 16) reports a case in a multipara on the third day of labor, in which the pelvis was narrowed by fibroids of the sacrum and pubes. There was a purulent vaginal secretion. The patient made a good recovery although two abscesses formed at the ends of the incision.

Bidder (*Centralblatt für Gynäkologie*, 1893, No. 24) reports the case of a primipara, eighteen years old, in which a purulent discharge appeared. The left labium near the clitoris contained a broad tear, which was repaired with silk. Endometritis and a stitch-hole abscess delayed recovery. There was a furrow visible on the surface, as the bones had not entirely united. After five weeks the patient was discharged from the maternity hospital.

In a case reported by Maygrier, in the same journal, symphysiotomy was done for dystocia caused by a periosteal tumor on the left side of the symphysis. After prolapse of the cord and one arm, embryotomy was performed; the anterior vaginal wall was torn to the extent of five centimeters. On the second day the patient suddenly died from a clot in the right pulmonary artery; the symphysis was separated only 2.5 centimeters.

Tellier reports a case in a primipara, twenty-seven years old, in which the perineum, bladder, and urethra were torn, and the patient died from shock two hours later; the child survived.

Lepage (*Centralblatt für Gynäkologie*, 1893, No, 20) performed symphysiotomy for dystocia, caused by a round tumor on the left side of the pelvis, with a favorable result.

Wertheim, in the same journal, reports a case in which the patient died on the eleventh day of sepsis, due to infection previous to operation. There was considerable odor to the liquor amnii.

Coe (*Medical Record*, 1893, No. 1172) reports a case in a patient with a contracted pelvis and deficient in mental development. She recovered from the operation, but died two months later demented. Union between the bones was firm.

In consideration of the fact that dementia has sometimes followed an otherwise normal delivery, this one case can hardly justify the conclusion that the operation was the cause of the mental disturbance. It is true that after some cases of ovariotomy dementia has also been observed; but the effect of the removal of the ovaries upon the whole organism must necessarily be so entirely different from that of a simple and only temporary separation of the pubic bones that a comparison of the two operations in this respect is absolutely inadmissible.

The case that I now report is one of those rare exceptions in which the difficulty in labor will be met with toward the pelvic outlet, owing to a contraction of the transverse diameter.

The patient was a primipara, twenty-eight years of age, below the medium size (a Jewess, of German ancestry, born in Rochester, New York, now living in San Francisco). I was called to see her in consultation with Dr. Dodel on the afternoon of January 13, 1893. She had been in labor for about twenty-four hours, and was showing signs of exhaustion. The fetal heart-sounds were strong and regular. The head presented in the first position, and had descended deeply in the cavity of the pelvis. The examining finger could reach the anterior fontanel. The uterine contractions had almost entirely ceased, in spite of the usual remedies employed for bringing on labor-pains.

Owing to the weakened condition of the mother, it was deemed advisable to terminate labor by the use of the forceps. After the patient had been anesthetized I introduced the hand in order to apply the forceps, but found it extremely difficult to gain an entrance into the vagina. It was only after considerable effort that I finally succeeded in forcing my hand inside, but by doing so I found that I had not made much progress, for it was impossible to introduce even the first branch of the instrument, and at the same time I felt in a painful way how the descending rami of the pubic bones impinged upon my hand, holding it in a vise-like grip, and forbidding any freedom of motion. The truth of the old saying, "Manus est optimus pelvimeter," never struck me so forcibly before, when it became clear to me that I had to deal with a funnel-shaped pelvis. On withdrawing the hand I found that in my efforts to gain an entrance into the vagina I had caused a laceration at the introitus vaginæ and ruptured the perineum, which gave rise to considerable hemorrhage.

After packing with iodoform-gauze in order temporarily to check the hemorrhage, I proceeded to perform symphysiotomy in full accord with the opinion of my colleague.

In the absence of sufficient assistance it was deemed advisable to make use of a leg-holder, the patient being brought to the edge of the bed and placed in the lithotomy-position. The joint was opened according to the subcutaneous method, and the bones separated suddenly and with an audible sound as soon as discission was complete. It was necessary to use the forceps to effect delivery, and a considerable degree of traction was necessary to accomplish this end, owing to incomplete dilatation and rigidity of the cervix. The distance between the pubic bones during extraction I estimated to be about five centimeters. The silkworm-gut sutures used to close the wound were passed as close to the bones as possible, and a long roller-bandage, about four inches wide, was used to bring together the hip-bones, over which was applied on the next day an elastic rubber bandage. The wounds in the vaginal wall and perineum had also been repaired with silkworm-gut.

The patient passed bloody urine on the following two days, and later it became purulent; but after washing the bladder several times with a 1 per cent. solution of silver nitrate this soon ceased. She made an uneventful recovery, and in spite of a narrow furrow which is palpable over the symphysis, her walk is perfect. She left the bed four weeks after the operation. The child is strong and healthy.

In this case the operation had to be done under the most unfavorable conditions imaginable. The room was dark, and a small oil-lamp, together with a couple of candles, without candlesticks, were all that was available for illumination. The bed was so dilapidated that it broke down before the work was done and the child had to be extracted, the mattress on which the patient rested being on the floor. Of assistants I had just one—my son, a medical student in his second year. Dr. Dodel had charge of the anesthesia. It was only with difficulty that we could obtain the necessary amount of hot water for preparing our antiseptic solutions and so on.

This case has taught me the lesson that it is not safe to depend on the use of a leg-holder alone when doing symphysiotomy, but that at least one more assistant ought to be secured, whose part it would be to prevent a sudden separation of the pubic bones by making a certain degree of counter-pressure against both hip-bones, for I feel satisfied that the hematuria was caused by some sort of laceration taking place in the deeper portion of the urethra, or the lower part of the bladder, in consequence of this sudden separation.

In the absence of a pelvimeter there was no possibility of ascertaining in figures the length of the different pelvic diameters which are of obstetric interest.

Since the convalescence of the patient I have taken some measurements with the following results:

Conjugate vera, 10.8 centimeters.

Transverse diameter of outlet, 9 centimeters.

Antero-posterior of outlet, 11 centimeters.

The length of the conjugata vera is of no interest in this case except to show that it came very near the norm. The principal difficulty was caused by the shortness of the transverse diameter of the pelvic outlet. For securing this measurement Breisky's method was used, as well as Schrœder's, both measurements giving the same results.

In view of the fact that a narrow furrow was palpable over the whole length of the symphysis the conclusion is inevitable that a permanent increase in this diameter must have resulted from the operation. I am inclined to think that originally it was not much above 8.5 centimeters.

The final conclusions to be formulated from this paper would be that:

1. Symphysiotomy is indicated in flat pelves with a conjugate of from 67 to 88 mm.; in funnel-shaped pelves with a transverse diameter of pelvic outlet of 88 mm. or less; in cases of dystocia caused by tumors in the pelvic cavity; in cases of abnormal size of the fetus, but with normal pelvis; and that it finds a useful application in the removal of tumors of the bladder and pelvis, provided the age of the patient does not present a contra-indication; but in those cases in which prophylactic podalic version is still possible, this ought to be preferred to symphysiotomy, even in a pelvis with a conjugate of not more than 8 centimeters.

2. It should replace Cesarean section and embryotomy whenever these are indicated within the lower limit of contraction.

3. The results are favorable to mother and child.

4. The operation is easily performed. Besides an obstetric outfit all that is needed is a surgical pocket-case.

5. It can very well be done outside of maternity hospitals. The after-treatment offers some difficulties in private houses.

6. Although comparatively safe, the operation may, in the hands of the inexperienced, be followed by serious accidents; it therefore ought not to be done lightly without an imperative indication.

7. As it is an operation of urgency, like tracheotomy, every physician should be able and ready to perform it.

THE SURGICAL TREATMENT OF INGUINAL HERNIA.[1]

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In order that we may the better understand the varying conditions presented in operative cases of inguinal hernia, I shall first ask you to review with me the anatomic structures in their normal development. The anatomic plan of construction of the parts in the transmission of the spermatic cord and vessels through the abdominal wall is by a line so oblique that the intra-abdominal pressure is normally placed at or near a right angle to the axis of the inguinal canal. However singular it may seem, I do not remember to have found a single reference made to this anatomic disposition of the structures in its possible application to the cure of hernia. This is, very probably, because the restoration of the parts to their normal anatomic relationship was impossible without the use of buried sutures.

In the upright position the weight of the abdominal contents is deflected forward by the promontory of the sacrum, in a way to lessen greatly the gravity-pressure upon the pelvic organs. The recti muscles form a strong supporting column with their basic anterior pubic attachment. Muscular strain, brought to bear with any degree of violence upon the abdominal wall, causes a deflection of the compression-force in nearly equal degree from the promontory of the sacrum, upon either side, to the aponeurotic attachment of the muscles to the pelvic bones. Thus it would seem that when the normal conditions obtain, this force must ever act in right lines to the inguinal canals. Were it not for this it would be difficult to understand why the normal condition of man, as an upright animal, should not be that of a hernial protrusion of the abdominal contents along the lines of a necessarily open inguinal canal.

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[1] Read before the Annual Meeting of the New York State Medical Association, 1894.

Perhaps we are more deeply indebted to Sir Astley Cooper than to any other for pointing out this remarkable provision of nature for the production and maintenance of this normal equilibrium of function and retaining force. He demonstrated that the transversalis fascia lying immediately beneath the peritoneum was normally so reinforced and strengthened as to form a strong posterior wall to the inguinal canal, and that it also, by the dissemination of its fibers about the cord, made a firm boundary to the internal ring, thus producing a fixation-point of definite character for the exit of the cord from the abdominal cavity.

Tracing the developmental forces during the late fetal period, we note the interesting and remarkable process of extrusion of the testicle from the abdomen, and the carrying with it of the peritoneal covering investing its vessels and vas deferens, making up the so-called spermatic cord. Normally, the peritoneum is so closed in about these structures at its exit from the abdomen that only by pulling upon the cord do we note the slight depression upon the peritoneal surface which lines the abdomen at this point. Not seldom, however, in individuals who are not subjects of hernia, the transversalis fascia about the internal ring is more open than normally, and the peritoneum, shutting in about it, is left in a considerable depression. Indeed, this condition exists so frequently that it has received the name of the infundibular process of the peritoneum. These are the conditions which are very commonly present as predisposing factors in all subjects of hernia.

Remembering the disposition of the intra-abdominal pressure as already noted, it is easy to understand that when this condition exists there is brought to bear upon the depression, in every movement of the body, a more or less powerful hydrostatic pressure upon this weak point, acting as a wedge, until at last the equilibrium of the forces is so disturbed that, little by little, the parts yield, the internal ring enlarges, the inguinal canal is by this much shortened, until by some extra force the external structures suddenly give way and the man finds himself ruptured—that is, a portion of the abdominal contents has become displaced through an abdominal opening.

I have presumed to occupy thus much of your attention in the consideration of the normal anatomic relations and functions of the parts involved in inguinal hernia, because this knowledge is especially important to the surgeon who, by operative interference, expects to secure a permanent restoration of the weakened structures, rather than to qualify himself only for the relief and restoration of the abdominal organs in strangulation.

The time at my disposal prevents a careful analytic discussion of the varying conditions that may be met with in the cases presenting themselves for operation, but assuming that we may favorably consider the subject of a hernia, who is otherwise healthy, a proper applicant for surgical relief, we shall take first into consideration those cases coming to us in infancy and childhood, the larger number of which will be of the congenital variety. Here it is well to remember that we have no hernial sac proper with which to deal; in other words, the scrotal pouch of the peritoneum containing the testicle is in direct continuation, as an open canal, with the abdominal cavity. We find usually that the opening in the transversalis fascia is very large, and the surgical procedures are not unlike those recommended for the restoration of the obliquity of the inguinal canal in cases of acquired hernia, after the peritoneal sac containing the hernial contents has been sutured and resected.

The dissection is commenced at a point a little above the internal ring, and is carried down sufficiently far on a line with the cord to expose clearly the internal ring. The structures over the cord are divided so that the latter can be elevated and clearly expose the border of the internal ring and the posterior wall of the cord. Either by finger, or some convenient instrument, an assistant holds the cord, freed from its attachments, toward the middle line with sufficient tension to define clearly its relationship with the deeper structures. This is done in order that a clear field may be had for the application of the sutures for the reinforcement and reconstruction of the posterior wall of the canal. For the accomplishment of this it is absolutely essential to use sutures that are buried in the structures, and are, as a consequence, beyond the power of the surgeon for subsequent removal. By general consensus of opinion, silk, although it may be used as a buried suture, is not considered applicable for this purpose. For somewhat similar reasons silkworm-gut proves unsatisfactory, because both of these materials, not being absorbed, are liable as sutures to prove irritants, and, in the subsequent muscular strain of the parts, are thrown off as foreign bodies. Good chromicized sterile catgut may serve as a trustworthy material for suture, but for a considerable variety of reasons, which cannot be referred to here, it has proved far inferior as a buried suture to tendon, preferably that from the tail of the kangaroo.

The way in which the suture is applied for the reinforcement of the parts, and the structures to be included for this purpose, vary considerably. I have felt for a long time that a double continuous suture is to be preferred, and for this reason devised the method of sewing in which the suture is applied by the use of a curved needle with an eye near the point. The first stitch is taken by entering the point of the needle through the lower border of the attachment of the conjoined tendon and the inferior posterior border of Poupart's ligament. The needle is unthreaded, the suture centered and tied in a half-knot, the needle rethreaded with the opposite end of the suture and withdrawn through the opening made at its entrance. Continuous sutures to the number of three or four are applied in this way until the last stitch closes firmly the inferior border of the internal ring quite upon the cord at its exit from the abdomen. The last stitch taken, the suture is tied upon the side and the ends cut short. It must ever be remembered that the object of the suturing is to hold the structures in even approximation without tension, and the chief danger from suturing lies in an *undue constriction* of the tissues. When properly applied, it will be observed that the transversalis fascia has been reinforced by the attachment of the posterior border of Poupart's ligament to the posterior border of the conjoined tendon, thus forming a new strong wall of the inguinal canal. Into this slit the cord is replaced and the external structures are joined so as to make a firm, strong closure of the parts over the cord. For this purpose buried tendon-sutures are equally desirable. These may be applied, as already described, by a line of double continuous suturing, re-forming the external ring by bringing together the outer border of Poupart's ligament and the conjoined tendon.

For one who does not possess a needle such as that described, the single continuous suture, applied with a curved Hagedorn needle, answers very well. The first stitch should be fixed by a reef-knot, and the needle is then inserted at a more or less considerable distance from the line of the division, but taken deeply through the aponeurotic structure on a line *parallel* to the incision. The needle is then introduced exactly opposite its point of former emergence through the structures upon the other side of the parts to be approximated, and in this way one stitch follows another to the end of the wound. It will be noted that tension upon the suture evenly intrafolds the edges, the suture itself, buried in the tissues, crossing the line of division only at right angles. In this way the line of union is very much deepened, and may be easily more than doubled, greatly reinforcing the structures adjacent to the canal. Another layer of sutures, similarly applied, approximates the soft parts, and a line of running sutures, taken through the deep layer of the skin only, closes the wound. This is dried and sealed with iodoform-collodion. No subsequent dressing or bandage is applied. The tunica vaginalis testis is thus re-formed, and the peritoneum closed securely about the internal ring so as to leave no depression.

The opposite extreme, the old large hernia in the adult, requires little deviation from the method described, except that the sac is first dissected free from its attachments, opened, to be assured of its contents—which may be disposed of as judged best, and then, quite within the ring, the sac is freed from adhesions and made tense by an assistant. The base is sewed across with a double continuous suture in a line with the axis of the wound, and the sac is resected. The retraction should be quite sufficient to place it out of the way in the subsequent steps of the operation, which are those that have been described for infantile hernia.

For teaching purposes I like best the large old scrotal herniæ, in which trusses have proved inadequate for the retention of the abdominal contents, since the various steps of the operation can be made more easily apparent.

Inguinal hernia in the male has ever been considered the most difficult of treatment, since the opening in the abdomen must be closed in a way to permit the passage of important structures, which, at the best, can add nothing to the support of the parts. In the seventeenth century it was found an easy matter to cure inguinal hernia by first removing the cord, and great numbers of hernia-patients were deliberately castrated as a means to this end. More recently, before an open dissection-wound was considered permissible, a great variety of ingenious subcutaneous devices were applied for the purpose of cure, but were usually followed by failure. Since it has been possible to make and maintain wounds in a non-infectious condition the advance toward the permanent cure of hernia has been rapid, until, in very recent years, new methods of cure are being constantly brought before the profession. However great in variety of detail, they must all be based upon a very few fundamental principles, and, in order the better to emphasize these, I have occupied so much time with the consideration of the normal anatomy of the parts involved.

Of course, the *ideal* method is to restore the parts to the normal standard of construction ; pathologic deformed structures having been removed, *e. g.*, sac and contents. To do this, it is necessary to restore the obliquity of the inguinal canal by the reconstruction of the internal ring, and to reinforce the posterior wall. To effect this, a free dissection must be made, and buried sutures must be used. It was for this very purpose, so far as the records of surgery show, that buried sutures were first employed. I had just returned from Europe and the instruction of Mr. Lister, and was familiar with the use of the buried animal ligature for the closure of arteries. It seemed a proper application of the principle that sutures might in like manner and with like result be buried in the tissues. For this purpose I first used catgut in 1870, which, prepared in various ways, I continued to use until 1880, when I made an extended search for some better material of like histologic structure. These investigations resulted in finding the exceptionally valuable tendon suture-material from the tail of the kangaroo. I demonstrated, histologically, that aseptic connective tissue, buried in healthy animals, is at first surrounded by leukocytes, that the foreign material is invaded by them, that, little by little, new connective tissue of a permanent character replaces the implanted suture. Since then I have used tendon-sutures almost exclusively.

It has been demonstrated that other material may be used for sutures, and that it may be applied in quite a variety of ways. These variations in detail and technique have been called *methods*, and have been presented under different names, *e. g.*, that of Bassini of Italy, perhaps the best known. He uses an over-and-over continuous catgut suture, and places the coapted conjoined tendon and Poupart's ligament behind the cord. Potempski thinks it important to carry the internal ring to a higher point than normal. Fowler modifies this procedure by carrying the internal ring nearer to the median line, while Halsted thinks it wise to cut away a part of the veins in order to reduce the size of the cord, and, as a consequence, the size of the canal. It remains to be seen how much additional value comes from these modifications; if the liability of the return of the hernia is lessened, and if, by such extreme measures, the function of the reproductive organs is not impaired.

It is ever honorable and pleasant to associate the name of the individual with the contribution of real merit which he makes as an addition to the store of the world's knowledge. However, little by little, names given to operations after the individual by whom they were established sink into forgetfulness, and wisely so, that they may not overburden our literature; but the plain underlying principles must ever be kept in mind as the true foundation of all present and future improvement.

For the cure of hernia by a restoration of the structures to their normal anatomic standard and relationship—and is it probable we shall find a better?—I introduced the use of buried animal sutures, which has been since widened in its application to all aseptic wounds. I demonstrated that a new oblique inguinal canal could be safely made and maintained; that the entire wound could be closed by buried sutures and sealed with collodion without drainage; and that primary repair ensued without pain or edema. I also showed that 90 per cent. of my cases remained permanently cured; all this before any of the modifications referred to were published. Whatever may be their advantages remains for others to determine. I know that the reinforcement of the structures posterior to the canal is ample, if the inner border of the conjoined tendon and Poupart's ligament is joined to the relaxed, but strongly developed, transversalis fascia. This fascia is very much thicker in this region, as was pointed out by Sir Astley Cooper, and for a long time, on this account, called the *fascia Cooperi*.[1] Often its intrafolding is all that is requisite to give a firm and durable support.

The introduction of animal sutures, aseptically buried in the tissues for a very great variety of purposes, especially the possibility by their use of the closure of the peritoneum and the reconstruction of the inguinal canal for the cure of hernia, I offer as a contribution to American surgery. It is with much satisfaction that I find that these surgical measures are now so very generally adopted throughout the civilized world.

Before closing, there are a number of practical considerations which are offered for discussion. Of these perhaps the first in importance is, When shall we operate? At present I suppose there are few surgeons who would dissent from the proposition that, in strangulated cases, always at the first moment practicable. Any attempt at reduction should be made with exceeding care, and after such efforts have failed immediate operation must be advised.

Operative measures for the relief of strangulated hernia vary essentially from those earlier advised in that the dissection is a free one and is always under visual guidance; that blind surgery is bad surgery can nowhere receive greater emphasis than in the operation for the relief of strangulated hernia.

The hernial contents having been disposed of, few operators would now consider their work complete without closing the structures in some of the ways advised for the purpose of permanent cure. The earlier attempts made to utilize the sac for the reinforcement of the opening—as, for example, the Macewen method—are now very generally abandoned, since the reinforcement of the structures posterior to the cord, in a very much more satisfactory manner, closes the weakened parts.

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[1] Muscular fibers may be traced behind the cord, as if the canal entered through a slit in the transversalis muscle. "The transversalis muscle arises from Poupart's ligament and passes around the spermatic cord at the internal ring, so that the fibers of this muscle appear behind as well as before the spermatic cord, and thus the inguinal canal is rendered a muscular canal. This is a most important provision in preventing hernia, and when hernia exists, is often the cause and seat of stricture."—*Sir Astley Cooper.*

Hernia in children. Until a moderately late period nearly all this class of little sufferers have been relegated to the instrument-makers. However, every surgeon is painfully familiar with the fact that it is exceptionally difficult to secure the proper wearing of a retention-apparatus, and that, at the best, the cure of hernia by these means is tedious, painful, and unsatisfactory. The earlier attempts at cure of hernia by dissection and suturing were in large measure unsatisfactory, because of the use of the interrupted suture, which had to be removed, and the extreme difficulty of keeping the wound aseptic on account of the application of the drainage-tube. It is painful to recall the punishment of the little sufferers because of the multiple aseptic dressings, sometimes held in place even by plaster bandages. With all the care possible, the great majority of the wounds became infected, dangerous, and far from satisfactory in results.

The closure of the parts, as already described, with the seal of collodion, renders further infection impossible, and primary union supervenes without pain or edema, resulting almost invariably in permanent cure. It is pitiable in the extreme to send a boy, rich or poor, into the race of life suffering from hernia, and handicapped with the necessary wearing of a truss.

Hernia in adults. It may be considered an open question if active, vigorous men who are sufferers from small herniæ, easily retained by a truss, should be subjected to a surgical operation. The expense incident thereto, the loss of a number of weeks during which they must abstain from business, are set over against the inconvenience of wearing an instrument, the probability of the hernia continuing to grow more troublesome and pronounced, and the ever-possible danger of strangulation. For my own part, I think the balance of account is usually in favor of operation, and I cannot question that the profession is each year becoming more and more of this opinion.

Hernia in the aged. As at other periods, the problem must always be considered as one of individual character. This becomes more especially so in the later years of life. Assuming that the hernial subject is free from organic disease, age *per se* weighs far less seriously as an adverse consideration in aseptic surgery than was earlier supposed. Primary repair of the tissues is almost certain to ensue with remarkably little constitutional disturbance. The contrast between septic and aseptic wounds is much more marked in advanced life, and aseptic surgery wins, perhaps, its most brilliant victories in the operative wounds upon the aged. I have operated upon a very considerable number of patients between seventy and eighty, under the most unpromising conditions, and even upon several between eighty and eighty-five, and in each instance with seeming easy cure.

In illustration, I cite a recent interesting case, and exhibit the specimens.

Mr. M., aged seventy-one years, a hard drinker, had for a very long period suffered from an old irreducible scrotal hernia of the right side. It had recently enlarged until the tumor extended quite one-third to the knee and measured about eighteen inches in circumference. An inconsiderate truss-vender had applied a strong-spring instrument upon the neck of the sac, and such inflammation had supervened that it was thought dangerous to permit delay in operation. The tissues were ecchymosed, and the sac was found to contain about a pint and a half of straw-colored serum and a fatty omental tumor the size of an adult fist, with basic attachments. The omentum was sewed across, resected, and returned within the abdomen. Several pints of ascitic fluid escaped from the canal, which readily admitted three fingers. The sac was dissected, sutured, and removed. The wound was closed, as already advised, and sealed. The man was found to have chronic nephritis, with albumin and casts in the urine, and jaundiced to a limited extent. This condition grew steadily more marked, and twenty-six days after the operation death took place.

The autopsy showed an interstitial hepatitis, the liver being reduced to half the normal size, with advanced disease of both kidneys. The union of the abdominal wound was primal, and I take pleasure in inviting your critical inspection of the specimens. The omental stump is smooth and the cut ends of the tendon-suture are apparently unchanged. The peritoneum at the base of the sac is firm and glistening, showing only the slight wavy line of union. The reconstructed abdominal wall is noteworthily deep and strong, nearly one-third thicker than upon the opposite side, owing to the intrafolding of the tissues. The skin-wound is marked only by a linear cicatrix. The fatty tumor of the omentum is exceptional, seeming on section to bear no trace of intrafolded compressed omentum, of which it is doubtless composed ; the thick, firm, leathery sac can even now be dilated to the size of a baby's head.

It will be noted that even in this aged man, dying from a complication of chronic diseases, the repair-processes, under aseptic conditions, went on uninterruptedly, precisely as in a young, vigorous adult.

Multiple operations. Individuals with hernia, suffering from various other conditions demanding surgical interference, may, as a rule, be safely operated on at the same time. It is usually advisable to operate upon both sides at once when the hernia is double, the repair-processes going on equally well, with a marked saving of time and confinement. I have even operated upon double inguinal and umbilical herniæ at the same time, with an equally easy convalescence and recovery. Multiple wounds, if aseptic, demand little more from the vital powers during the process of repair, and there is much positive gain to the patient in time, expense, and confinement. Multiple operations have long been almost of daily occurrence in my surgical practice.

If operative measures are so generally advised for this disablement, it must be that the surgical procedures are attended with very little risk of life. Upon this subject the testimony is ample, and perhaps no other operation demonstrates more clearly the differences of result obtained under modern aseptic technique. Nearly twenty-five years ago, when I first commenced operation for the cure of hernia, it required persuasion to secure the presence even of physicians, because of the responsibility incident to personal attendance. So general was the belief—and, unfortunately, on altogether too good evidence—that an open dissection-wound made for the cure of hernia was always dangerous, that operation was not advised except in cases of strangulation.

In my recent work upon hernia,[1] I have collated over three-thousand operative cases of hernia by various aseptic surgeons, who report less than one per cent. of deaths, and these explained by conditions in which the wound itself had no part. In my entire experience of over two-hundred cases I have never seen a patient approach the danger-line following operation when the intestines were not involved.

He who is master of aseptic conditions may safely operate for the cure of hernia, if he is thoroughly conversant with the anatomy of the structures. *Aseptic sutures, aseptically applied in aseptic wounds*, and aseptically maintained. This is the *sine qua non*, or failure will ensue; otherwise buried sutures are not to be commended in any wound, and must even be a source of danger.

In how large a percentage of cases may we expect permanent cure?

Upon this question there has been and still is a great variety of opinion, based upon the results, of course, obtained from the various methods of operation in use. We can well understand the opinion as given by Dr. Bull, of New York, that relapses are the rule rather than the exception, when we remember that the results of the operations that came under his observation were due to methods that failed to secure the restoration of the obliquity of the canal, or the reinforcement of the deep structures. The removal of the sac and the suturing of Poupart's ligament to the conjoined tendon, without the re-formation of the inguinal canal, necessarily left a large funicular opening in the abdominal wall, the very end of which only was closed at the external ring. Under such conditions, it is usually only a question of time before the hernia reappears.

In 1893 I read a paper before the American Medical Association, in which I gave an analysis of one-hundred-and-thirty-three cases that I had been able to keep under observation; of these there were six recurrent herniæ, four of which I have since operated upon. About one-third of this number had been under observation for ten years and more.

Did time permit, I would gladly quote from the experience of some of the recent operators, of whom, perhaps, none is more enthusiastic at the present than Dr. Bull himself and Dr. Coley, of your city.[1]

Corroboration of the principles and position that I have advocated so long is now ample, and there is little question that the more serious sufferers in the great army of truss-wearing individuals will early receive from the surgical profession easy and safe curative measures. In this field aseptic surgery has won one of the most brilliant victories of the present revolutionary period.

A NEW METHOD OF PEDICLE-LIGATION IN ABDOMINAL SURGERY.

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VISITING SURGEON TO THE U. B. A. HOSPITAL, AND SURGEON TO THE CHILDREN'S HOME, GRAND RAPIDS, MICH.

The death of a patient from hemorrhage due to faulty pedicle-deligation during the course of an abdominal operation is a catastrophe sufficient to cause the cheeks of any surgeon to pale. When all else in the technique has been perfect; when asepsis has had full sway; when there has been no particular bleeding, no shock, no complication; when the danger of subsequent peritonitis is practically *nil*, and everything bespeaks a favorable outcome, the death of a patient from the slipping of a thread is an awful calamity, and any method by which the possibilities of such a *denouement* may be narrowed is a matter of vital interest to both patient and surgeon.

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[1] The Anatomy and Surgical Treatment of Hernia. Illustrated. Quarto. D. Appleton & Co. 1892.

[1] From a recent letter by Dr. William B. Coley of New York I quote: "I have used kangaroo-tendon in 170 of my 183 cases of hernia, and have never had any trouble from it; and I believe my success was largely due to using it as a buried suture-material. No other results, here or abroad (except, perhaps, your own), show such a percentage of immediate or final cures. Of my 140 cases where the cord was transplanted I have had but one relapse—137 cases traced. In 170 cases where kangaroo-tendon was used, suppuration occurred only four times—and then superficial, outside the layer-sutures of tendon."

It is my purpose to put on record, for the use of the profession, a new method of applying a pedicle-ligature in abdominal surgery, by which the same not only *will not* but simply *cannot* slip.

The ligature has been employed in actual practice, with perfect satisfaction and ease of application, and has been exhibited to the members of the Grand Rapids Academy of Medicine at a recent meeting of that body.

There are four sources of danger from intermediary hemorrhage in the application of a pedicle-ligature: 1. The employment of the wrong knot. 2. The lack of sufficient force in tying the loop or loops. 3. The application of apparently sufficient force upon a pedicle while held in a state of tension. 4. A defective method of application.

1. No surgeon to-day needs to be told that the sailor-knot (also known as the reef, or square, or unslipable knot) is the one to be employed whenever even an isolated artery is to be tied. Comment on this point is unnecessary.

2. The lack of sufficient force in the tying of a ligature-loop is a real danger that should be carefully guarded against. If thought best, when a consideration of this point is under discussion, the pedicle can be ligated in sections sufficiently small to insure the operator's ability to compress adequately the included tissues.

3. Deaths have occurred from pedicle-hemorrhage after surgeons have used all the force they deemed necessary; but such force having been applied to the pedicle while rendered rigid by too great traction, the result, after the withdrawal of this traction, has been the same as when too little force has been exerted upon a lax pedicle, viz., the liberation of vessels, with the escape of blood.

4. The method heretofore employed in the application of pedicle-ligatures has been faulty in that it has always rendered possible a subsequent intermediary hemorrhage as the result of the slipping of a loop.

Even the Staffordshire knot, which was said to be perfect, has slipped, and thus permitted hemorrhage to occur.

In my opinion the Staffordshire method is vastly inferior to the one ordinarily used in this country, viz., central transfixion, linking, and tying both ways, as much more power can be employed in the latter than in the former. Of course, I am not discussing ligature-material in this contribution.

Geometrically speaking, a line (in this instance a diameter) is determined by two points, and, therefore, no looped ligature, single, double, or of the chain-variety, is safe, which is not fixed at two opposite points on the periphery of each loop, or, to be more explicit, at opposite extremities of their long diameters.

It can be said that such a condition obtains in the Staffordshire ligature, for such is, indeed, the case; but the weak point of that ligature in this connection is the fact that, in securing the two fixed points on the periphery of the main loop, two subordinate loops are made, the lateral diameters of which are almost certain to be longer than the opposite diameter of the main loop. Those familiar with the Staffordshire method will comprehend the force of this statement. The subordinate loops of this ligature are just as dangerous as the loops fashioned after the American plan, if not more so.

It is not my belief that the so-called American ligature is particularly unsafe. It is not. Deaths therefrom are rare. But it is certainly dangerous enough to warrant improvement, if improvement be possible. That it is possible I leave the reader to judge.

The old method is strong in this respect: that the ligature can never slip entirely away from the pedicle, for it has a fixed point at the center of the same; and this can also be said of the Staffordshire ligature, for I am now discussing the ordinary, double-looped ligature as described; neither can it slip when the distance from the loop to the section is greater than, or even the same length as, the diameter of the loop. These considerations, however, could have no weight with a single-looped ligature, and they are not simple enough, not accurate enough, for universal use. The security of a pedicle-ligature should not depend upon the distance, long or short, from the planes of its loops to the point of section.

FIG. 1.

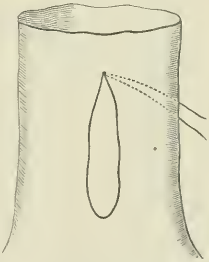
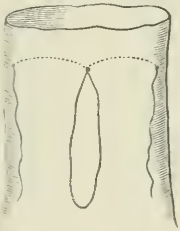


FIG. 2.



The accompanying drawings are self-explanatory. The loops, it will be seen, are fixed by passage through the substance of the pedicle at points on opposite ends of their long diameters, viz., in the center and circumference of the pedicle.

Any bleeding from the transfixions, and some does occur, may be disregarded, for all vessels of respectable size are included in the loops, or it can be readily checked by throwing a loop from one of the remaining ligature-threads around the entire pedicle and tying the same, as per drawings.

FIG. 3.

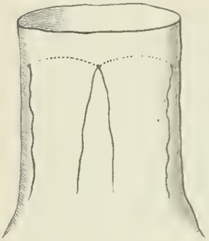


FIG. 4.

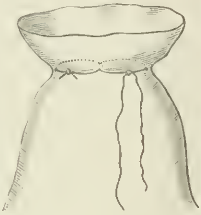


FIG. 5.

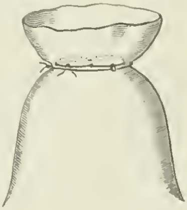


FIG. 6.

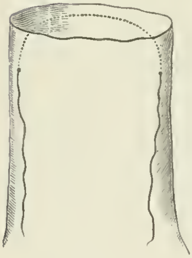
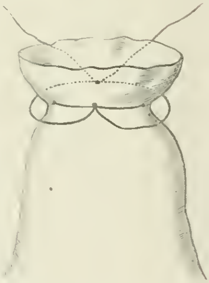


FIG. 7.



This long loop would, of course, have only *one* fixed point, and, therefore, might possibly slip; but such an accident is not at all likely to occur—not as likely as with the loops of the old ligature—because the thread lies in natural grooves rendered possible by the traction of the primary loops at the points of peripheral penetration, and even if slipping *should* occur, the danger would be practically nothing, on account of the insignificant size of the involved vessels.

Finally, if an operator, when he has occasion to deal with the pedicle of any variety of tumor, or with the bases of degenerated or suppurative tubo-ovarian masses, will, *first*, make use of the reef-knot in connection with his ligature; *second*, employ sufficient compressive force in his application of the same; *third*, be sure that the tissues to be ligated are lax when the knot is drawn, and, *fourth*, apply the method here described, he will, in my opinion, be doing all that it is possible for man to do in the prevention of one of the saddest accidents incident to the practice of surgery.

The principle that underlies this new method, viz., that of peripheral fixation, is applicable in different ways. For instance, when a pedicle to be secured is slender or composed of soft tissues which are easily compressible and not too bulky, as is often the case, especially in the slighter forms of tubal and ovarian disease, there is no need of central transfixion. If the ligature-ends be simply drawn through the two peripheral points—opposite each other—and a single loop thus made, the ligature cannot slip. The ends of the ligature may then be passed around the entire pedicle as ligated and tied, to prevent the puncture-point bleeding, if thought advisable.

That central fixation is not necessary in the tying of slender pedicles is shown in Figs. 6 and 7. The abandonment of central transfixion in proper cases will save time.

I desire in this connection to acknowledge the artistic services of Dr. James Orton Edie, of this city, in the preparation of the drawings illustrative of the text.

CLINICAL LECTURE.

TUBERCULOUS LYMPHADENITIS—AN OLD DISLOCATION OF THE SHOULDER—SINUS FROM BULLET-WOUND OF THE HUMERUS.[1]

BY ROSWELL PARK, A.M., M.D.,
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TUBERCULOUS LYMPHADENITIS.

THIS patient is a girl of fourteen, who has a tumor in the axilla which is not rapidly growing, but which has certainly increased in size in spite of internal medication. You see in her features a pretty fair example of the second type of scrofulous diathesis. There is about them nothing attractive, no pearly sclerotic, no delicate skin, while the features are coarse. The child is a mouth-breather, the tonsils being moderately enlarged, but not enough so to account entirely for the mouth-breathing; neither is there obstruction of the nares. The person who breathes habitually through the mouth without any manifest mechanical interference with nose-breathing will almost invariably be found to be of low intelligence.

The history of the case is very meager; there is no account of an injury to the arm or hand; in fact I can offer no explanation why the axillary nodes should be affected rather than those of other parts of the body. While the nodes are steadily augmenting in size, they are not at all fixed in the surrounding tissue, as they would be if the trouble were malignant; nor is there evidence of carcinoma elsewhere in the body to which the nodular enlargement might be secondary. The girl presents the so-called scrofulous diathesis, which simply means that the soil is favorable for the development of tuberculosis. I can trace the involvement of the lymphatics under the pectoral muscles, extending up toward the neck; and it seems to me best, inasmuch as the child has not improved on appropriate medication addressed to the resorption of the enlargements, to remove the larger nodes and thus eliminate the greater part of the diseased process.

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[1] Clinical Lecture delivered at the Buffalo General Hospital.

The operation is not particularly difficult, though the dissection is a little tedious. I have now removed a large lymph-node from the axilla, somewhat flattened, and the size of a hen's egg. Under the pectoral muscle I find another, disc-shaped, and about three centimeters in diameter. These, with several smaller nodes, I also remove. I shall close the wound without drainage, and apply an antiseptic dressing.

There is a lobular condition of the breasts that might be taken to indicate an extension of the tuberculous process; but I think it is physiologic, because the patient is at about the age of puberty, when the mammary gland enlarges, and is liable to present lobulations. In such a case as this I believe that the hypodermic use of tuberculin would be beneficial. Along with it I should advise the use of guaiacol and tonics.

AN OLD DISLOCATION OF THE SHOULDER.

This patient is a woman, of sixty-two, who fell down stairs sixteen weeks ago, and sustained an injury to the shoulder. She called a young physician who, according to the account given me, did not examine her shoulder very closely, but advised her to apply some liniment or lotion and rest her arm. This was done, but she did not recover the function of the arm, and she summoned a second physician, who discovered that the woman had a dislocation, and a day or two later he anesthetized her, and attempted to reduce it. The arm was bandaged after this attempt; but later it was found that the motion of the joint was not restored. This was eleven weeks ago. It is charitable and not unreasonable to suppose that the first physician reduced the dislocation with his first movement of the arm, so that he did not recognize the condition, and that later the head of the humerus again slipped out of place. It is admitted that he did not see the patient often. I mention the matter, not with any idea of blaming any one, but to impress upon you the necessity of making a careful examination in each case. The patient has been sent to the hospital for relief, but I have said to her and to her physician, that, although I shall make a reasonable effort to reduce the dislocation, I cannot promise that it will be successful; and that if reasonable efforts fail, rather than run any risk of breaking the bone, or rupturing large vessels, I will abandon the attempt and resect the head of the humerus, thus relieving her pain and allowing the arm to be moved. Theoretically it is possible to break the adhesions, but practically it is also possible to break other structures. Once I broke the surgical neck of the humerus in the attempt; but this accident occurred in an insane patient whose bones were more fragile than usual. It has happened in the experience of others that the axillary vein or artery has been ruptured, producing a hemorrhage calling for immediate amputation. So far as the interest of this patient is concerned, it is not justifiable to use much force. The veins and arteries have become more or less brittle from age, while the bones are weaker. The adhesions which have formed in a shoulder-joint sixteen weeks after dislocation are so firm as to render reduction often impossible. In attempting to break adhesions for any purpose in surgical practice, unless you succeed the result is an increase of the evil, because adhesions are composed of organized clot and inflammatory exudate; and when a band is torn, as many must be by active manipulation, hemorrhage occurs, and more exudate is thrown out, glueing the parts still more firmly together. However, in the present instance there is nothing to lose by the venture, for the slight mobility of the arm is of no practical benefit.

With the patient anesthetized and lying on her back, I cannot show you all the signs of dislocation. You will note, however, that the axis of the humerus does not point to the acromion, but internally. Again, beneath the coracoid process I cannot indent the tissues as could ordinarily be done, but I come upon a hard mass which moves when I rotate the arm, and is evidently the head of the humerus.

Dugas' test depends upon the fact that when the head of the humerus is dislocated, and the hand of the injured limb is placed on the opposite shoulder, the elbow cannot be made to touch the thorax. This is on account of the barrel-shape of the thorax. Normally, the upper end of the humerus is away from the thorax, and the lower end can touch it, whereas, in dislocation, the head of the humerus is practically in contact with the thorax, and the elbow cannot also be made to touch the ribs. This test I cannot well demonstrate at this late stage, on account of the adhesions.

I shall show you another test, which is made by driving a sterilized hat-pin into the head of the humerus through the soft parts. You can see the movement of the head of the pin when the humerus is moved.

The attempt at reduction includes, first, rather rude miscellaneous movements to loosen the head of the bone from the nest in which it now lies. I have not only to overcome the displacement of the humerus, but the glenoid cavity has been unoccupied for so many weeks that it has become partially obliterated.

Kelly, of Dublin, has devised a method of reduction that consists in seizing the wrist, wrapping the arm about the surgeon's body and attempting to turn around. This pulls on the arm while, with his disengaged hand, the surgeon tries to direct the head of the humerus into the glenoid fossa. This method is applicable to certain recent cases, but not to old cases. Kocher's method consists almost purely of manipulation, with the exertion of very little force. It consists in extensive outward rotation, followed by traction on the elbow, while the arm is circumducted toward the body with an extensive sweep. As the hand is brought down, the arm is rotated inward.

You have seen me perform these movements, and I now find that the head of the humerus is loose enough, and in that sense the dislocation has been reduced. There is, however, no fossa into which it can fit. I shall retain the head of the bone in as nearly as possible the normal position for a few days, and then, if there seems to be no prospect of its finding permanent lodgment, I shall advise its resection.

SINUS FROM BULLET-WOUND OF THE HUMERUS.

This patient consults me with regard to a sinus in the right arm and near the shoulder, due to a bullet-wound from a revolver fired at a distance of ten feet. The sinus has persisted for some ten years, during which time pieces of bone have been discharged. Not only does the patient complain of the annoyance of the constant discharge of pus, but of late he has suffered from a numbness in the forearm and "rheumatic pains" in the shoulder. There is no indication that we have a lesion of a definite nerve-trunk. The numbness shifts, and is quite diffuse, showing that no single branch of the brachial plexus is involved. Trouble of this sort is not uncommon in cases of necrosis of bone.

We have to deal with a compound injury of bone, not, however, a compound fracture. In order to trace the direction of the bullet, I have asked the man to show me how he stood when he was shot. He says that the arm was hanging at his side. On inserting a probe I come upon what feels like chalk; that is, carious bone. Just where the bullet is I cannot say. Surgically speaking, there is but one thing to do here; that is, cut down upon and expose the bone, scrape out the diseased area, and, incidentally, remove the bullet if we find it. I shall take no especial pains to find the bullet, for one of the lessons that modern military surgery has taught us is, that a bullet may lie perfectly harmless in the tissues. We have lost the old terror of a piece of lead which has perhaps been rendered aseptic by the heat developed by its rapid passage through the air, and is usually encapsulated in the inflammatory tissue which organizes about it. During our Civil War almost every bullet was sought for. Since then we have learned that it is better to leave the wound filled with clotted blood—the best sealing that it could have—than to churn up the clot with a probe, and further lacerate the tissues in the attempt to locate and extract the bullet. Even to-day nine-tenths of the men who use the probe to find a bullet will use a dirty one. The practical demonstration of the utility of modern surgical principles as applied to military surgery we owe mainly to Europeans. These principles were first put to a severe test in military practice in the Campaign of the Caucasus between Russia and Turkey, and were reported on by Dr. Reyher.

There are times when it is of advantage to know where a bullet has gone, especially when we have to deal with wounds of the skull and brain. It is of advantage to know whether in a bullet-wound of the abdomen the bowel has been perforated or not, but such facts can usually be determined without probing. Again, by studying the direction of the ball when it struck the body, by knowing the bones or sheets of fibrous tissue from which it may have been deflected, by noting what nerves have had their function interfered with, we can derive more information as to the location of the bullet than we can from the use of the probe. For military purposes the probe is generally useless, and often has been worse than useless. Even in this case, when there was nothing to be feared from the use of the probe, it has given me little information that I could not have learned from the history and the appearance of the sinus. The lesson that I wish you to learn from this case is that, if a bullet-wound is properly attended to in the beginning, there is little occasion for secondary interference. Providing the skin be clean, and your hands aseptic, the best treatment you can give a recent bullet-wound is to apply an antiseptic occlusive dressing, and let the wound alone, unless suppuration calls for interference later.

[Later, the bone was exposed, curetted, the sinus eradicated, and an antiseptic dressing applied.]

CLINICAL MEMORANDUM.

OVARIAN SARCOMA WITH ASCITES: OPERATION; RECOVERY.

BY CAPTAIN A. E. BRADLEY,
ASSISTANT SURGEON U. S. ARMY.

MRS. G. W. C., aged sixty-six years, was first seen in October, 1893. Living eighteen miles in the country, her husband informed me that I had better go prepared to tap, giving me a brief description of her condition. I found her sitting in her chair with an enormously distended abdomen; she had been unable to lie down for over two weeks, and was suffering much distress from embarrassment of respiration. I succeeded in obtaining a specimen of her urine, which was found to be normal. There existed a marked degree of gastric distress and uneasiness, with eructations; the tongue was heavily coated, the bowels torpid. Examination of the abdomen demonstrated the presence of ascitic fluid; the lower extremities were extremely swollen. The woman gave a history of a swelling in the right abdomen, first noticed six years previously; it had enlarged slowly, but had never been at all painful or troublesome. In the spring of 1893 her abdomen began to enlarge, and she was examined by a homeopathic physician, who informed her that she had a "floating tumor," and advised non-interference. Later she had received treatment directed to the general condition from a regular physician of high standing, but the abdominal symptoms progressively became worse.

On tapping, three water-buckets full of clear characteristic ascitic fluid were withdrawn; while not accurately measured, there certainly was not less than thirty-six liters. The patient was immediately relieved, and at once was enabled to assume a reclining posture. Examination of the now lax abdomen revealed a firm movable tumor about the size of an infant's head in the right iliac region, somewhat tender to touch. On being assured that a tumor existed, she announced that she never would submit to operative procedures.

Six weeks later a second tapping was necessary, twenty-four liters being removed, and in January a third tapping withdrew a like quantity. The woman's general condition had improved under treatment, and though the tumor was rapidly enlarging, she persistently refused operation.

Early in March I found her suffering from an attack of epidemic influenza, and in such condition that it was thought that she could not survive the day, much less a fourth tapping, which, other things being favorable, was indicated. I left digitalis and nux vomica, and much to my surprise, a day or so later, learned that she was better, and desired more of the medicine. Her general condition improved to such a marked degree under this treatment that I again urged operation, which she finally accepted, May 14th being the date decided upon. The only available room in the house for operation answered the purpose of best room, general living-room, and bedroom, and was only about 12 x 14 x 7 in its dimensions. It was ordered to be cleaned, and everything was removed except the dining-table, which was utilized as an operation-table. All woodwork was wiped, after thorough cleansing with a sublimate solution, and the patient herself was prepared in the manner usual for abdominal operations.

Assisted only by Hospital-steward Erck, who skilfully administered the chloroform, and Private Hanson, of the Hospital Corps, with a neighbor present who had received a nurse's training in a Chicago school, I operated. A small median incision was made, allowing sixteen liters of ascitic fluid to escape; the tumor proving solid, the incision was enlarged to eleven inches before it could be extruded. There were no adhesions, and the pedicle was not more than three-fourths of an inch in thickness. On casting the silk for its ligation, I found that all the silk prepared for the operation was worthless; it had been boiled for an hour and kept in alcohol until used. Fortunately catgut was on hand, and with this the pedicle was secured and the tumor removed. Digital exploration showed the remaining pelvic organs in normal condition. The peritoneal incision was united by a continuous catgut-suture, the parietes by interrupted catgut, reinforced by a continuous skin-suture; a glass drainage-tube was passed into the pouch of Douglas and secured at the pubic end of the incision, a suture being passed through the edges of the incision here, but not tied. Iodoform, sterilized gauze, absorbent cotton, and gutta-percha tissue comprised the dressing; the tube protruded through the tissue and had a separate dressing, to permit its inspection without disturbing the whole dressing. The duration of operation, from the beginning of the anesthesia, was one hour and fifteen minutes. So skilfully was the chloroform administered that 11 c.c. sufficed.

Evidences of shock were successfully combatted by hypodermics of whiskey and strychnin. The patient was put to bed surrounded by hot bottles, in good condition. She passed a restless night, having persistent nausea, which in a measure yielded to frequent sips of hot water, nothing else being given. On the evening of the operation the temperature was 100.2°, and during convalescence it never rose above 100.8°. Frequent hypodermics of strychnin were given during the night and following day. So great was the discharge of serum that the whole dressing had to be changed on the following morning, and the urine was withdrawn by catheter.

Owing to the distance, the patient was not seen again until Thursday, when the drainage-tube was found to be protruding nearly its whole length from the incision. The nurse said that the woman was passing her urine all right, but the catheter demonstrated a distended bladder, the urine dribbling away—incontinence of retention. The distention of the bladder had forced out the tube; as the discharge seemed to have nearly ceased it was not replaced. The provisional catgut suture to unite the edges about the tube was then taken up, but on inspection it was found that the portion within the tissues had already been absorbed. For several days the catheter was necessary; later a mild cystitis developed, which proved troublesome.

The abdominal incision fortunately united throughout by first intention; the catgut used for the interrupted sutures was defective, and stitch-abscesses developed along the whole incision, discharging for ten days great quantities of pus. Had the interrupted stitch been used through all the tissues, the peritoneum included, the pus would have undoubtedly infected the peritoneal cavity, with fatal results.

It was my intention to use the silk for all tissues, but, as noted, it was worthless at the operation, and the catgut was the only material available. These abscesses and the cystitis retarded recovery, which is at this writing complete. The site of the incision has shrunk to a firm cicatrix, undoubtedly stronger for the suppuration caused by the sutures, and about four inches in length. There has been no return of dropsical conditions, no evidence of a return of the growth, and the patient's general condition is excellent.

The removed tumor was smooth, of a firm fibroid texture, containing no cysts, cutting with resistance, and of a glistening white appearance. It was 5 inches thick, 24 and 21 inches, respectively, in its greater and less circumferences, and weighed 8 pounds; the weight of the fluid removed at the operation was 32 pounds, the total weight 40 pounds.

The following report has been kindly furnished me by Professor Penrose, of the University of Pennsylvania:

"Your report of case and specimen received a few days ago. Microscopic sections show it to be a small spindle-celled sarcoma, *i. e.*, it was composed of a very large number of small spindle cells and many small round cells. Since there were no adhesions, and the pedicle was so very small, the prognosis it seems should be good, yet because of the associated large amount of ascites, and the fact that sarcoma of the ovary usually returns, no definite prognosis can be given. Fibroma of the ovary is almost always small in size, and the shape of the ovary is not destroyed. Fibroid tumors of large size having the same characteristics as were present in your case originate in the uterus. Sarcoma of the ovary is very rare, occurring in the relation of 1 to 100 (?) ovarian cysts. I hope this report is satisfactory, and hope that we may hear from you again.

"Very sincerely,
"Charles B. Penrose,
"Prof. Gynecology Univ. of Pa.
"Per Beyea."

When this patient was first seen the symptoms seemed to indicate hepatic trouble. It was learned later that this was the diagnosis given by the regular physician who had seen her. It was impossible to obtain a consultation with other medical men, but after careful study of the case I was positive in the belief that the tumor was the cause of the dropsical condition. It also seemed probable, in view of its slow development, that it was non-malignant, an ovarian fibroma, though the microscpic examination has shown it to be sarcoma. The operation was performed under difficulties, the unfavorable surroundings, the absence of skilled assistance, and the distance from the post, all rendering it an undertaking the outcome of which could not be assured.

The patient herself, though sixty-six years of age, possessed an amount of courage but seldom seen, and never wavered once in her confidence and belief in the ultimate success of the operation.

Sufficient time has not elapsed to know whether there will be recurrence, but most authorities are inclined to favorable prognosis in such cases.

NOTE.—On November 15, 1894, six months after the operation, the patient was in perfect health, doing her own housework, and maintaining that she had not felt so well for twelve years.

POST HOSPITAL, FORT SULLY, S. D.

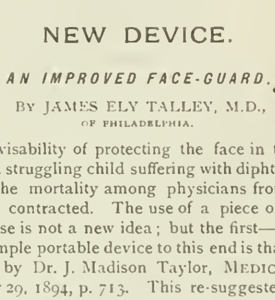
NEW DEVICE.

AN IMPROVED FACE-GUARD.

BY JAMES ELY TALLEY, M.D.,
OF PHILADELPHIA.

THE advisability of protecting the face in the examination of a struggling child suffering with diphtheria finds proof in the mortality among physicians from the disease thus contracted. The use of a piece of glass for this purpose is not a new idea; but the first—so far as I know—simple portable device to this end is that recently described by Dr. J. Madison Taylor, MEDICAL NEWS, December 29, 1894, p. 713. This re-suggested an idea that occurred to me while Resident Physician at the Children's Hospital, but which was not followed up because in the other hospitals in which I served I saw little diphtheria.

The device shown in the cut differs from that already exhibited only in that it can be attached to the band of an ordinary head-mirror.



The points of advantage are that it leaves both hands free, does away with the necessity for a second person to hold it, and moves with the head, and is always in the position desired.

In construction, as little metal as possible should be used, so that the instrument shall not be too heavy. The glass is held in place by a screw running the whole width of the guard, so that it can be easily removed, and readily renewed if broken.

If it be desired to hold it in the hand, it may be used as it stands, or the ball-bearing may be tapped for a screw-handle, after the manner of some laryngoscopic mirrors. Sheathed in a flexible case it may be carried in the pocket or in a bag.

FIFTY-FIFTH STREET AND LANCASTER AVENUE.

MEDICAL PROGRESS.

A Case of Rapid Gliosis of the Spinal Cord.—At a recent meeting of the New York Neurological Society, HOLT and HERTER reported the case of a male child, aged one year, with a good family history, in whom, three months before coming under observation, a weakness was noticed in the right arm and hand, and the head began to droop forward. The motor paralysis in the right arm gradually increased, and finally there was complete loss of power in both arms and in the shoulder-muscles, with atrophy. The muscles of the neck were exceedingly rigid, and the head was carried stiffly, slightly in advance of the normal position, with the face looking directly forward. There seemed to be some loss of power in the legs. The knee jerks were exaggerated, especially on the right side. Ankle-clonus was present on both sides. There was considerable dyspnea, and coarse râles could be heard over the entire chest, but there were no signs of consolidation. The temperature showed irregular daily variations, ranging from 100° to 105°, and even higher. There was occasional vomiting. The pupils were equal, normal in size and responsive to light. There was partial analgesia of the body below the arms. The respirations ranged from 32 to 52 per minute. After the lapse of a month slight strabismus was noticed, and the head was rolled continually from side to side. At times there was marked cyanosis. The temperature rose to 106°, and death took place.

Upon post-mortem examination a grayish, projecting mass was found occupying almost the entire right side of the medulla and a larger part of the left side. The medulla was considerably enlarged from before backward, and from side to side. There was also considerable enlargement of the cord as far down as the eighth cervical segment, and from this point to the sixth dorsal there was some enlargement; below this the cord appeared to be normal. Histologic examination, made at different sections of the cord, revealed a typical gliomatous structure, which involved to a greater or less extent the medulla and almost the entire cord. The appearance of the preparations examined renders it probable that the new formation of glia-cells was derived from the proliferation of the ependymal and peri-ependymal cells. Although the new growth involved almost the entire extent of the cord, it is only to the well-developed growth in the upper half of the cord that the symptoms presented by the patient are to be attributed. The high temperature could hardly be accounted for by the pulmonary condition present, and was probably due to the rapid destruction of nerve- elements in the spinal cord.

Nephrectomy for Sarcoma of the Kidney in a Child Twenty-five Months Old.—At a recent meeting of the Allegheny County Medical Society, at Pittsburg, DR. X. O. WERDER reported the case of a girl, twenty-five months old, that came under observation on account of a small umbilical hernia which had been present for three months. Examination, however, disclosed also a growth in the left hypochondriac region, somewhat larger than an egg. The tumor grew rapidly in size until it occupied the greater part of the left half of the abdominal cavity, extending from the ribs to the crest of the ilium and downward into the left iliac fossa, to within about an inch of the umbilicus, and filling out the left lumbar region. The tumor was not sensitive to touch, and was slightly movable in an antero-posterior direction. The child was plump and healthy in appearance, although there had been some wasting. A diagnosis of malignant disease of the left kidney was made, and nephrectomy advised. Accordingly, an incision about six inches long was made in the left semilunar line, and subsequently enlarged an additional two inches. The peritoneum over the tumor was incised, the very thin surrounding fatty capsule opened and peeled off, and the tumor lifted from its bed, together with the kidney, which was behind and continuous with the growth. The pedicle was ligated at the hilum of the kidney, and included all of its structures; several bleeding points were ligated; the cavity was carefully sponged out and closed without sutures, and the abdominal wound united with silkworm-gut sutures, without drainage. The child stood the operation well. Little blood had been lost. Urination took place spontaneously about two hours afterward, and during the night about ten ounces were passed. The child was dismissed from observation fifteen days after the operation, and subsequently gained considerable flesh. The growth proved to be a rhabdomyo-sarcoma originating from the kidney.

Unusual Malformations of the Brain.—At a recent meeting of the Association of American Anatomists in New York, PROF. BURT G. WILDER showed three remarkable specimens from the collection of Cornell University:

1. An adult human brain with a complete interruption of the central fissure. The total number of such cases recorded does not exceed twenty.

2. A sheep's brain, lacking the callosum or great cerebral commissure. Several human brains with this defect have been described, but the only other cases in animals are three cats, all in the Cornell Museum.

3. A three-months' human fetus with the left olfactory bulb, commonly rudimentary, half as long as the cerebrum, as in most of the lower animals, and containing a considerable cavity. It has long been a belief of Prof. Wilder that the olfactory apparatus is primary and of great morphologic importance; that the recognition of food by smell was once more essential than reflection upon its qualities. The specimen in question, believed to be unique, suggests the possibility of reversion toward a far-off ancestral type.

To Examine the Larynx and to Remove Laryngeal Growths in Young, Nervous, or Unmanageable Children, SPICER (*British Medical Journal*, Nos. 1769, 1770) recommends the preliminary cautious use of a 10 per cent. solution of cocain, followed by the inhalation of chloroform to maintain moderate general anesthesia. An assistant holds the child in the usual position for laryngoscopy, while another stands behind the patient and keeps the head erect and square to the operator; a third assistant stands behind and to the right, holding the mouth-gag; while a fourth holds the tongue out with forceps. In the removal of neoplasms sittings may be repeated at intervals of one or two weeks.

THERAPEUTIC NOTES.

The Treatment of Diphtheria with the Antitoxin.—At a recent meeting of the Clinical Society of London, WASHBOURNE, GOODALL, and CARD (*British Medical Journal*, No. 1773, p. 1417) reported the results of observations made at the Eastern Hospital in 80 cases of children under fifteen, submitted for treatment with the antitoxin of diphtheria. Bacteriologic examination was made in all, but diphtheria-bacilli were found in but 61. Eight of the cases in which diphtheria-bacilli were not found would have been considered not to have been diphtheric had a bacteriologic examination not been made; these were excluded from the statistics. The other 11 at first presented the appearances of diphtheria, but their further progress fully bore out the bacteriologic evidence. Among the 72 cases there were 14 deaths (19.4 per cent.). The significance of this mortality becomes apparent when compared with that of previous years. During the year 1893 there came under observation 397 cases, with 166 deaths (41.8 per cent.); from January 1, 1894, to October 22, 1894, 400 cases, with 144 deaths (36 per cent.); from January 1, 1893, to October 22, 1894, 797 cases, with 310 deaths (38.8 per cent.); from September 14 to October 22, 1894, there were 72 cases not treated with serum, with 28 deaths (38.8 per cent.); from October 23 to November 27, 1894, 72 cases treated with serum, with 14 deaths (19.4 per cent.). Of the 61 cases shown bacteriologically to be diphtheric, 13 died (21.3 per cent.). Among the whole number tracheotomy was required in 9 cases, with 3 deaths. The serum used was obtained from the British Institute of Preventive Medicine and was administered as follows: In severe cases, 20 c.cm. were injected when the patient was first seen, followed by 10 c.cm. in from eighteen to twenty-four hours, and again another 5 or 10 c.cm. in from another eighteen to twenty-four hours. In moderately severe cases a first dose of 10 c.cm. was injected and followed by one of 5 c.cm. the next day, and perhaps another of 5 c.cm. a day later. In mild or doubtful cases, a single dose of 5 c.cm. was injected if there were reason to suspect that the condition was likely to become worse.

HERRINGHAM (*Ibidem*, p. 1428) related that 22 cases had been treated at St. Bartholomew's Hospital with the antitoxin, and that in 4 diphtheria-bacilli were not found. Of the remaining 18, 7 were mild and all recovered; 5 were severe; 6 very severe. Tracheotomy was required in 10 of these 11, with 3 deaths, and in 1 intubation. In previous years tracheotomy had been performed in 63 cases, with 41 deaths.

KOSSEL (*Deutsche medicinische Wochenschrift*, 1894, No. 51, p. 946) has made a further report upon the use of the antitoxin in the treatment of diphtheria at the Institute for Infectious Diseases in Berlin. From March 15 to December 1, 1894, there came under observation 119 cases, of which 2 were moribund and were not treated with the antitoxin. Among the 117 there were 13 deaths (11.1 per cent.). There came under observation on the first day 14 cases, all of which recovered; on the second day 30 cases, with 29 recoveries; on the third day 29 cases, all of which recovered; on the fourth day 9 cases, with 8 recoveries; on the fifth day 11 cases, with 9 recoveries; on the sixth day 6 cases, with 3 recoveries; on the seventh day 5 cases, with 3 recoveries; on the eighth day 6 cases, with 3 recoveries; on the ninth day 1 case that died; and on uncertain days 6 cases, with 5 recoveries. Bacteriologic examination was made in all cases; in 2 diphtheria-bacilli could not be found, but in 1 of these a complicating otitis media developed, and was attended with perforation, and in the pus discharged diphtheria-bacilli were present.

The mortality in the children's department of the Charitié, among cases not treated with antitoxin, was, in 1889–90, 52.4 per cent.; in 1890–91, 60.1 per cent.; in 1891–92, 62.8 per cent.; in 1892–93, 56.4 per cent. In 23 of the cases treated with the antitoxin, tracheotomy became necessary, with 11 recoveries (47.8 per cent.). Of the 104 cases in which recovery ensued, 57 were free from albuminuria, which was present in 41. Of the latter the albuminuria persisted but a single day in 9 cases; for two or three days in 11; for from four to seven days in 9; and for longer periods in 12. In 10 of the 13 fatal cases albuminuria was present on admission. Paralyses developed in 19 of the 104 cases that recovered. In 5 cases the action of the heart was disturbed. No relapse was observed. As to dosage, recent cases received 600 immunity-units; cases with doubtful prognosis, 1000 immunity-units; and cases of long duration, 1500 immunity-units.

TREYMANN (*Ibidem*, p. 951) has reported the case of a child, three years old, in which acute hemorrhagic nephritis developed in the sequence of an attack of diphtheria of moderate severity treated with the antitoxin. The child came under observation on the third day of the disease, and at once received an injection of serum No. 2 (1000 immunity-units), and on the following day an injection of one-half the dose of serum No. 3 (750 immunity-units), which was repeated a day later. For a time improvement manifested itself, but in the course of two weeks the membrane in the throat reappeared, and a further injection of serum No. 1 (600 immunity-units) was given. On the following day albumin appeared in the urine for the first time; the renal secretion became scanty in amount and hemorrhagic in character, and microscopic examination disclosed the presence of red and white blood-corpuscles, with tube-casts and epithelial cells. Several days later complete anuria developed for twenty-four hours, with edema of the eyelids, but the condition gradually subsided and progressed to ultimate recovery.

In contrast with the preceding case SCHWALBE (*Ibidem*, p. 952) has reported the case of a child, ten-and-a-half years old, in which acute hemorrhagic nephritis developed in the course of an attack of diphtheria not treated with antitoxin.

REMBOLD (*Ibidem*, p. 963) has reported the case of a girl, seven-and-a-half years old, in which paralysis of accommodation developed in the sequence of an attack of diphtheria treated with the antitoxin. Two injections each of serum No. 1 (600 immunity-units) were made on the second and third days of observation respectively. The visual defect was noted several weeks after recovery from the primary disease. In a second case in a girl, eleven years old, a single injection of serum No. 1, made on the first day of observation, was followed in nine days by the appearance of a scarlatiniform exanthem upon the upper and lower extremities. Two days later the child complained for a few hours of pain in the sacral region and in the lower extremities, and for five days there was inability to stand. The eruption gradually disappeared in the course of four or five days, and recovery was ultimately perfect.

A Pemphigoid Eruption Following the Administration of Copaiba.—SEQUEIRA (*British Medical Journal*, No. 1768, p. 1108) has reported the case of a man, twenty-eight years old, who, for the relief of a slight attack of urethritis, took three capsules of copaiba at night, followed by five on the following day. After the lapse of another day the face became swollen and red, and the body covered with red patches. In the evening several blisters appeared on the legs. When seen, the face was slightly swollen and red, and the arms and thighs presented irregular erythematous patches somewhat raised above the surface. Upon the lower portion of each leg over the tendo Achillis were large bullæ about the size of a small hen's egg, together with several smaller ones, six on the right and five on the left. The walls of the bullæ were strong and tense and contained clear serum. They were not surrounded by areolæ, and after rupture the exposed skin rapidly closed over under treatment.

In the Treatment of Pleural Effusion SÉGALÉA (*La Médecine Moderne*, 1894, No. 101, p. 1580) has employed with success topical applications of guaiacol in the following formula:

℞.—Guaiacol . . . . . ♏ xxxvi.
Glycerin
Tincture of iodin } . . āā f℥ss. M.

The applications are made by means of a brush to the entire posterior aspect of the chest, which is then covered with cotton and an impermeable dressing and a bandage.

In a case of anasarca, with anuria, in the sequence of scarlatina, in which other measures had failed, applications of the following combinations were soon followed by relief:

℞.—Guaiacol . . . . . ♏ xvi.
Glycerin . . . . . f℥ss. M.

In the Treatment of Trachoma, GRAY (*Journal of the Arkansas Medical Society*, vol. v, No. 2, p. 55) recommends the employment of a powder of resorcin (one part) and boric acid (five parts). The eyelid is strongly everted and thickly dusted by means of a camel's-hair brush with the powder, which is well rubbed in with the end of the little finger. In order to reach granulations in the retro-tarsal fold, the flat, blunt end of a nail-cleaner of bone or ivory is used. The pain resulting from the application lasts for from a few minutes to nearly an hour. The frequency of application is governed by the effect, as shown by the degree and duration of the irritation. In some cases an acute granular conjunctivitis may be induced. The treatment is applicable to advanced cases of chronic diffuse trachoma, but not to cases of acute or follicular trachoma.

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SATURDAY, JANUARY 12, 1895.

THE NATURE, ACTION, AND SPECIFICITY OF ALEXINS AND ANTITOXINS.

THE conditions underlying natural or inborn immunity are quite different from those concerned in acquired immunity. Many different theories have been advanced to explain the nature of the former, but no one of them is altogether satisfactory. According to some authors, headed by BAUMGARTEN and PETRUSCHKY, natural immunity is often due to the absence in the animal of nutriment of a character suitable for assimilation by the specific bacterium that causes the disease. Although this hypothesis may have a basis of fact in a certain number of instances, it will by no means explain all cases of natural immunity.

It is quite possible that in some animals a natural immunity to many microörganisms is directly dependent upon certain physiologic peculiarities. Thus KARLINSKY states that the immunity from anthrax which snails possess is partially due to the acid that they manufacture, and a similar explanation may hold good for the local immunity (*e. g.*, from anthrax) seen in many animals when the virus enters the stomach.

Undoubtedly, in attempting an explanation of this question many factors have to be considered, and on close examination the safeguards with which the higher animals are provided will be found to be manifold and often complex. When we remember that we constantly carry about with us in the cavities, as well as on the surface, of our bodies, microörganisms that under favorable conditions are capable of giving rise to serious and sometimes fatal infectious processes, the importance of a due appreciation of the natural resisting powers of the body becomes easily evident. While the integrity and well-working of the local defensive mechanisms (*e. g.*, epithelial membranes, ciliated surfaces, antiseptic secretions), which in the main are either mechanic or chemic in their action, are of the highest importance in determining susceptibility, we know that even when pathogenic bacteria have eluded these peripheral sentries the body still holds in reserve active agencies for combatting their growth and multiplication, and is often still capable of destroying them completely. According as these mechanisms are efficient or inefficient in protecting against a specific bacterial virus, we can speak of an individual as being insusceptible or susceptible to infection with that bacterium and to the particular disease to which it gives rise.

The efficacy of the machinery of defence varies with the general nutrition, so that an animal may at times prove susceptible to a virus from which the species is ordinarily immune. Further, the differences in susceptibility which various species show to infection with the same variety of bacteria have long been known, and can only be explained by the assumption of corresponding variations in the defensive mechanisms.

The nature of the internal protective processes, with the exception of the filtration by organs such as the lymph-glands and the spleen, has been much disputed. One class of investigators attribute the main credit of the internal natural resistance to an active warfare waged by certain cells of the body, of mesodermal origin, especially the leukocytes and endothelial cells; the members of another school claim that it is in the germicidal power of the fluids of the body that the explanation of natural immunity must be sought, and that the phenomena usually classed as chemotaxis and phagocytosis are secondary and subordinate.

That the blood-serum when removed from the body does possess definite germicidal power has been proved beyond a doubt, notwithstanding the objection of VON CHRISTMAS, who stated that it was only the old and degenerate bacteria which, when introduced, did not multiply, and that of JETTER, METSCHNIKOFF, and HAFFKINE, who believed that the results that had been adduced in support of the idea of a germicidal activity of the serum were not specific, but were rather to be looked upon simply as due to the injurious effects that are known to follow the sudden transference of bacteria from one medium to another of different concentration.

That extra-vascular blood-serum exercises a germicidal influence does not, of course, prove that the blood within the vessels of the living body possesses the same power. It has even been urged that the appearance of germicidal activity in the serum may follow and depend upon degenerative changes in the blood that only come about after its withdrawal from the body.

It would take too long to enter fully here into the arguments dealing with the question. It may be stated, however, that direct experiments have been made by BUCHNER, STERN, and ENDERLEN to show that the intra-vascular blood possesses definite germicidal power.

Again, it is claimed that the germicidal activity of blood-serum is most marked immediately after its removal from the body, and, further, that the blood of animals naturally immune from anthrax is more actively bactericidal than that of susceptible animals, although there are several experiments, the results of which appear to contradict this latter statement. The facts that the toxins of bacteria can completely destroy the germicidal power of serum (LUBARSCH), and that rattlesnake-poison completely abolishes it (WELCH and EWING), are in favor of the view that the germicidal activity is normally possessed by the intra-vascular blood.

The germ-killing power of the blood-serum has been shown to depend upon the presence in the latter of certain chemic substances very complex in their nature, presumably allied to the albumins, and which have been called by BUCHNER, alexins, and by HANKIN, defensive proteids. It is probable that the alexins have their origin in the cells of the tissues. These substances, whatever they are, are very unstable bodies that soon disintegrate after leaving the animal body. Heating to the temperature of from 50° to 55° C. for half an hour destroys them, as does the prolonged action of light or an excessive supply of oxygen. As we have had occasion to point out before in these columns, when writing of the teleology of sunburn and tan, it would seem as if it were by no accident that the blood and organs are buried within the body as in a dark chamber.

The alexins are even more unstable than the enzymes, such as trypsin and papayotin; but, unlike the unformed ferments, they are incapable of causing hydrolytic cleavages, though they can destroy bacteria against which the ordinary ferments are inactive.

It would appear that the same substances on which its germicidal activity depends are also responsible for the well-known globulicidal power of the blood-serum; that is, the power of destroying the red and white blood-corpuscles of an animal of a different species.

One curious fact that has been made out is that the activity of dogs' serum or of rabbits' serum is diminished by the addition of water, but can be reestablished by adding an amount of sodium chlorid sufficient to restore the normal concentration of the fluid. The action of salt appears to be only indirect, its presence rendering possible the action of the serum-alexins, and potassium and ammonium chlorids, as well as potassium, sodium and ammonium sulphates, exercise the same influence as the sodium chlorid. The addition of sulphates of the alkalies to the diluted serum increases the activity of the alexins and heightens the resistance of the latter to the effects of heat so that they can withstand a temperature higher by at least 10° C. BUCHNER maintains that the addition of the salt to the serum increases its resistance to heat by extracting water from the alexins, and, in order to account for the complexity of the bodies, suggests that they may not be simply substances in molecular solution, but that the serum may represent a micellar solution, an explanation which it may be remembered was long ago suggested by NÄGELI for the differences between crystalloids and colloids.[1]

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[1] Buchner even suggests the possibility of the existence of chains or bands of micellæ with water-molecules lying between the individual members of the chain. If the entrance of salt into the interior of the micellar bodies or chains was prevented, then, according to the laws of osmosis, the surrounding fluid, as it increases in concentration, must remove water from the micellæ or micellar bands. Again, a diminution of the amount of salt in the surrounding fluid would lead to an increase of the water in the micellæ. The latter change would lead to swelling, the former to increased consistence of the micellar structure, and hence to increased resistance to an external agent such as heat. Buchner lays considerable stress on the distinction between active and inactive albumins, and thinks that the differences may possibly be explained by alterations in the micellar arrangement of molecules that are chemically constant.

As much or more difference of opinion exists concerning the nature of acquired immunity as concerning the natural resistance that an organism offers to infection. While there is evidence that through artificial means the natural resistance can be increased, yet it would seem that in acquired immunity the protection does not depend upon the same factors as are concerned in natural or inborn immunity. In acquired immunity the blood-serum of the animal possesses definite antitoxic power against the toxins of the bacterium against which it has been immunized when injected with them into a susceptible animal.

The substances in the blood-serum of immunized animals upon which the antidotal power is dependent are very different from the alexins of normal blood-serum. The antitoxins are tolerably stable; moreover, so far as is known, unlike the alexins, they are not variable according to the species of animals from which they come, but are dependent upon a reaction to the toxins of the variety of bacteria from which the animal is rendered immune.

If the blood-serum of an animal naturally immune from a certain bacterial infection be introduced into the body of an animal naturally susceptible to the same infection, so far as is known little or no protection is afforded by the procedure. In acquired immunity and in cases in which an animal has been rendered "poison-proof," the antitoxins are transferable to another animal, and a temporary and *passive* immunity is conferred upon the latter. This transferred immunity must not be thought, however, to be paramount to the immunity gained by an animal by the injection of virus or toxins. In the latter case the body of the animal has suffered a reaction to the toxins; the immunity is *active*, and the cells of the body go on producing antitoxic substances even after large quantities of blood have been removed from the animal. In the animal that has only *passive* immunity, on the other hand, it is believed that the cells do not manufacture the immunifying substances, so that the period of immunity will depend mainly upon the amount of antitoxic serum introduced, and the protection will gradually become less sure as the antitoxic compounds are gradually eliminated from the blood through the excretory organs.

We have in a previous article pointed out that the term antitoxin is badly chosen, since its use might create an impression that a direct destruction of the toxins is understood to occur. Buchner succeeded in preparing antitoxic substances in a dry condition from the blood-serum of animals rendered insusceptible to tetanus, and mixed them with dry tetanus-poison. On injection of this mixture into white mice the animals were not disturbed, though when introduced into guinea-pigs in the same proportions it gave rise to distinct symptoms of tetanus. Buchner believes that this experiment alone is proof that the tetanus-poison and the antitoxin act separately in the organism, the latter rendering the tissues and cell-territories less susceptible to the action of the former. Since the cells of the guinea-pig require more antitoxin to render them insusceptible to the toxin of tetanus than do those of the white mouse, the specific organization of the body of the animal in which the mixture of poison and antidote is being tried must be looked upon as representing an essential factor in the result.

Buchner views the antitoxic activity as an immunizing influence that acts rapidly; but, however this may be, it seems certain that the antitoxins of themselves are not capable of multiplying within the body, and that alone they are incapable of bestowing the peculiar imprint upon the cell-metabolism that, in the immunity acquired through the action of bacteria or their toxins, leads to the manufacture of antitoxic substances.

Roux and Vaillard proved that with mixtures of toxin and antitoxin, even when the antitoxin predominated, the phenomena of tetanus could be set up if an animal were previously weakened in any way, or if the products of other bacteria were injected at the same time. It would thus appear as though the tissues and cells of a weakened organism were not able to utilize the antitoxins so as to make themselves insusceptible to the poison in the same degree as those of a healthy organism. A very interesting observation in this connection is recorded by Calmette, Phisalix, and Bertrand, who showed that the serum of animals rendered immune from snake-poison possesses antitoxic power. When the antitoxin was added to snake-poison in sufficient quantity to render the mixture on injection inactive it was found that on heating the same mixture to 70° C. (a temperature that destroys the antitoxin) the poison again became active.

Finally, observations concerning the specificity of the healing substances have to be mentioned. It has always been believed that the antitoxic substances in the serum of an immunized animal were of a specific nature, that is to say, that the serum of an animal immunized against diphtheria, for example, would be powerless against the toxins of bacteria other than diphtheria-bacilli, or, in other words, that the substances antitoxic to the products of a specific bacterium could be made inside the body of a living animal only through the action of the same bacterium or its products. The confidence in this doctrine of the specificity of the antitoxins contained in the serum of immunized animals is already shaken.

In the first place, bacteriologists are coming more and more to the view that the products of all bacterial metabolism have much in common, that is to say, that bacteria of different kinds may produce similar or identical poisons, although in very different amounts. The investigations of Centanni on the cause of the fever in the infectious diseases tend to show that almost all bacterial forms produce a common pyrogenic substance, the so-called *pyrotoxina bacterica*.

Roux states that while the normal blood-serum of the horse exercises no effect on cobra-poison, the blood-serum of a horse immunized from tetanus when mixed with cobra-poison renders the latter harmless on injection, and this notwithstanding the fact that the physiologic effects of the toxins of the tetanus-bacillus and of cobra-poison are by no means analogous. The serum of an animal rendered immune from snake-poison does not, however, possess any protective influence against the toxins of tetanus. The serum of an animal immune from tetanus is more actively antitoxic to tetanus-poison than to snake-poison, but the difference appears to be a quantitative, not a qualitative one.

Again, the normal blood-serum of a rabbit has no antitoxic influence on snake-poison, but the blood-serum of a rabbit immunized against hydrophobia is also protective against snake-poison, and will often prevent the injurious effects of from four to five times the ordinarily fatal dose. It is claimed, further, that the serum of animals immunized from snake-poison makes rabbits more resistant to the toxic effects of abrin, and that antiabrin increases the resistance of a rabbit to the action of snake-poison.

The whole subject grows more interesting as it increases in complexity. At the present time sweeping statements are not allowable, for, as Lubarsch has said, "what is written on immunity to-day may, when it appears in print to-morrow, be already old."

EDITORIAL COMMENTS.

Laminectomy for the Relief of Spinal Compression.—It can scarcely be said that the results of surgical intervention for the relief of compression of the spinal cord resulting from fracture, caries, hemorrhage, neoplasm or what not, have been altogether encouraging; but in a condition in which non-interference must in many, if not most, instances prove inevitably fatal the unfortunate victim should at least be given the chance afforded him. In cases of a chronic and non-progressive character good may be hoped for from expectant and conservative treatment, but in cases of acute compression, or in which the lesion and symptoms are progressive, and in cases in which the diagnosis is in doubt, laminectomy would be justified. Recent medical literature has contained reports of numerous cases in which this operation has not been attended with the expected results. It is, therefore, a satisfaction to be able to cite an instance[1] in which the outcome was favorable. The case was under the observation of Mr. Noble Smith, of London, and occurred in a woman, thirty-one years old, whose spine had been injured by lifting a heavy weight four years before coming under observation. The accident was followed by pain and weakness, not only in the back, but also in the lower extremities. A felt jacket was applied, but with little relief. The symptoms gradually progressed until walking was interfered with. A distinct angular projection was present, its most prominent point corresponding with the tenth dorsal vertebra. Efficient mechanical support relieved the pain in the back, and the patient improved both as regards the general health and the weakness in the back. The vertebræ seemed to become consolidated. A feeling of coldness in the lower extremities and great difficulty in walking, however, remained.

A course of rest, with massage and special feeding, was followed by relief for a short period, but subsequently the difficulty of walking became more pronounced. For a year the patient had been obliged to use crutches. For several years there had been pain of a neuralgic character in the region of the sacrum, gradually increasing in acuteness, with periodic attacks of greater severity. The pain was less when the patient was quiet, but was induced by attempts at walking. The patient was able, when standing between two chairs and supporting herself on them, to lift the knee of each leg up about four inches, and backward to about the same extent. The knee-jerk was natural, and there was no ankle-clonus. There was dulness of sensation upon the anterior and posterior aspects of the thighs and in the legs, and hyperesthesia upon the buttocks and over the sacrum. Laminectomy was decided upon, and the neural arches of the eighth and ninth dorsal vertebræ were removed. There was no fat over the dura mater, which was congested, and in the upper part of the opening in the position beneath the removed arch of the eighth vertebra was found a spongy material like granulation-tissue. This appeared to be the source of pressure upon the cord, and was removed. It covered the dura mater as far downward as it was exposed transversely, being rather thicker on the right than on the left side.

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[1] British Medical Journal, No. 1770, p. 1232.

The amount removed was about equal to the contents of an ordinary hazelnut. The patient made a rapid recovery from the operation. The wound appeared quite healed from the third day after the operation, except at the lower part, where a drainage-tube had been left for twenty-four hours. The day following the operation the patient remarked upon the great difference in her sensations, having lost the cold feeling from which she had suffered for several years. She gradually recovered strength, and with a supporting apparatus began to walk about three weeks after the operation. Five months after the operation the former coldness in the lower extremities had not returned, the digestion had improved, and headache and spasmodic jerking of the limbs, which had been present, were gone.

Prenatal Endocarditis.—Our views upon the etiology of endocarditis have hitherto been altogether too narrow. We have been satisfied to believe that in most cases the endocardial inflammation was to be ascribed to an attack of rheumatism, obvious or overlooked, and have ignored the multitude of other factors that may act in a causative way. Rheumatism causes endocarditis either by infection or by intoxication. Any other condition capable of acting in the same way may also give rise to endocarditis —or, as a matter of fact, to inflammation of any or several of the serous membranes. The well-known clinical fact that the left side of the heart is almost invariably alone attacked by endocarditis is explained by the great functional activity of this side. Reasoning on the same line, one would look for right-sided involvement when the endocardial inflammation occurred during intrauterine life. Another explanation for this localization is the transmission of the infection through the placental circulation.

ZARIQUIEY (*Maladies de l'Enfance*, November, 1894, p. 620) has reported a case of right-sided endocarditis that could be used in support of this assumption. It occurred in an infant that at birth presented marked cyanosis, especially upon crying, with a certain degree of dilatation of the veins of the trunk and head and hyperemia of the conjunctivæ. Upon auscultation the normal heart-sounds were heard at all of the orifices, as well as a murmur following, but not obscuring, the first sound, and occupying the period of silence. This murmur was soft and prolonged, and audible over the whole cardiac area, but it was heard with greatest intensity at the base upon the left, and was propagated toward the clavicle upon the same side. There was no edema, and the pulse was normal. At the age of nine months the child had an adeno-phlegmon below the left angle of the lower jaw, and at the age of ten months an exfoliative glossitis. In the eleventh month it died of an extensive phlegmonous process of the scalp. Upon post-mortem examination the heart was found to be slightly increased in size as the result of hypertrophy of the right auricle. The coronary veins were tortuous and distended with blood. The tricuspid orifice was narrowed, and the foramen ovale was closed in its posterior two-thirds by a thick fibrous membrane, while the anterior third was divided by a fibrous band passing from the anterior margin of the membrane to the anterior margin of the foramen. The walls of the right ventricle were considerably thickened, while its cavity was reduced in size. The tricuspid ring was thickened, hard, and large. Its leaflets were short and rigid, and the orifice was reduced in size. The pulmonary orifice was so contracted as scarcely to permit the entrance of a probe.

It seems reasonable to conclude that the lesions in this case were due to an inflammation of the endocardium of the right side of the heart during fetal life, and that this was in all probability in its turn due to irritants present in the maternal circulation.

The Treatment of Varicose Ulcers.—One of the most troublesome conditions with which the physician has to deal is that of chronic ulceration of the lower extremities. The affection can be usually traced to a depraved constitutional state, usually in conjunction with circulatory atony, local or general. Many modes of treatment have been recommended, but none is efficacious in all cases. To be successful, therefore, one's resources must be extensive. To the plans already in use SUMMERS (*Medical Record*, No. 1255, p. 655) adds another that commends itself for its simplicity. He has reported the case of a woman, fifty-six years old, who had suffered from chronic ulcers of the legs for many years; the veins, from the knees down, were much dilated and the cutaneous circulation was poor. The treatment consisted in cleansing the ulcers with a solution of sodium bicarbonate, followed by the application of a solution of methyl-violet, care being taken to bring this in contact with the entire area of the base and margins. After allowing the fluid to dry, each stained ulcer was covered with a bit of absorbent cotton, and mechanical support was furnished by an elastic bandage. The entire procedure was repeated every morning. In the course of a few days it was evident that healing had begun, and in the course of several weeks perfect recovery had taken place. We are confident that proper mechanical and gravitational support must play an important part in every form of treatment for varicose ulceration of the lower extremities from which good results are to be expected.

Decrease of Population in Ireland.—From information contained in the annual reports of the registrar-general of Ireland, it appears that the population of Ireland reached its maximum in 1845, when it was estimated to be 8,295,061. A slight decline took place in 1846, but the serious decrease commenced in 1847, the year of the potato famine. During the seven years between 1846 and 1853 the population diminished two million. Since 1853 the decrease has continued at a fluctuating rate. In the middle of 1894 the population of Ireland was estimated as 4,590,700. In the decade from 1841 to 1851 the decrease was 19.9 per cent.; in that from 1851 to 1861, 11.5 per cent.; in that from 1861 to 1871, 6.7 per cent; in that from 1871 to 1881, 4 4 per cent., and in that from 1881 to 1891, 9 1 per cent. In 1891 there were on an average 4.3 acres of land to each enumerated inhabitant, including infants and children, whereas in 1871 and 1881 the proportions were 3.7 and 3.9 acres respectively. These changes are attributed to the serious and repeated failure of the potato crop and to the marked deficiency of manufacturing and industrial occupations for the inhabitants. It is maintained that notwithstanding the falling off in population the aggregate wealth has considerably increased.

Laboratory-Teaching of Large Classes.—At the recent meeting of the American Society of Naturalists, in Baltimore, a communication from PROF. BURT G. WILDER was read, stating briefly the experience at Cornell. The system of Practicums (as distinguished from the laboratory-work of the more special or advanced students) was introduced in 1880 for Vertebrate Zoology, and in 1886 for Physiology. The classes range from 40 to 180. Japanese napkins are used in place of towels. The students seem to enjoy the work. In 1892 a rack was devised, something like a long music-rack, clamped along the middle of a wide table, for holding the text and plates of dissections. Professor Wilder urged that all this work be included in the requirements for admission to college, and cited as a practical argument the inconvenience of storing in alcohol or formalin so many somewhat bulky specimens; for instance, about 170 each of sheeps' hearts and brains, and entire cats.

Cardicentesis, with Recovery.—The ability of vital organs to recover from direct traumatism of a profound character is well illustrated by a case reported by SLOAN (*British Medical Journal*, No. 1772, p. 1368) at a recent meeting of the Edinburgh Medico-Chirurgical Society, in which puncture of the heart with the escape of a considerable quantity of blood was unattended with evil results. The case occurred in a woman, nineteen years old, who, in a fourth attack of acute rheumatism, complicated by endocarditis and pericarditis with effusion, appeared to be *in articulo mortis*, when a trocar was suddenly introduced for the purpose of evacuating the fluid. About ten ounces of blood escaped, apparently from the right ventricle. No bad symptoms followed, but, on the contrary, improvement soon set in, and the case progressed to ultimate recovery.

REVIEWS.

A MANUAL OF MODERN SURGERY, GENERAL AND OPERATIVE. By JOHN CHALMERS DA COSTA, M.D., Demonstrator of Surgery, Jefferson Medical College. Philadelphia: W. B. Saunders, 1894.

THE purpose of this book is "to stand between the complete but cumbrous text-book and the incomplete but concentrated compend." Certainly this is a most laudable object, particularly as teachers of surgery, as of other branches in medical schools, are awakening to a realization of the great value of the recitation in the place of many a lecture in the formal course; are beginning to perceive that an exercise for which the student must prepare himself, and in which he must take a conspicuous part, either to his credit or shame, has educational advantages over the system in which the lecturer only is active, and his hearers merely passive receptacles of his words of wisdom. There is a growing demand for text-books from which the student may learn his recitation. The large work, which comes near supplying the needs of the busy physician, is too extended for the student, and the compends, so compressed that all the flavor, excepting that of a dictionary, is squeezed out of them, fall far short of reasonable requirements. Just what things to insert, and how much they should be condensed, are questions upon which no two teachers, of equally large experience, will agree absolutely; and, therefore, no critic can approve entirely of the selection and treatment of topics in any book. In order to secure perfect accord the author and critic must have been cast in the same mold, and have had identical environments—conditions manifestly impossible.

Dr. Da Costa has, however, in most respects, succeeded so well in his attempt that we predict the adoption of this volume as a class-room text-book by many teachers, and the preference for it by their students over other books that they have used. The author is evidently a good student of surgical literature, and is thoroughly imbued with the most advanced ideas. His style is easy, clear, and direct, and his judgment in selection generally excellent. But, though we can say so much in praise, there are various things upon which we entertain opposite views; and we feel obliged to offer our hearty disapproval of some of his positions. He omits entirely the consideration of diseases of the breast on account of "limited space," while devoting thirty pages to the matter of ligation of arteries in their continuity. The former subject is constantly presented to the general practitioner, is of the gravest importance, and is not usually treated in works on gynecology. The latter comes up for practical consideration but rarely, and is so largely anatomic that a good knowledge of topography is alone almost sufficient equipment for its management. We trust that this serious disproportion will be corrected in the subsequent editions which we expect will be called for.

ATLAS UND GRUNDRISS DER TRAUMATISCHEN FRACTUREN UND LUXATIONEN. Von PROF. DR. H. HELFERICH in Greifswald. Mit 166 Abbildungen nach Originalzeichnungen von DR. JOS. TRUMPP. München: J. F. Lehman, 1895.

THIS excellent little book is one of a series of "Hand-Atlanten" on various branches of medical science which admit of pictorial illustration. It is intended to afford to students an introduction to the important study of fractures and luxations, and to serve as a useful guide to practising surgeons. At first sight it might impress one as belonging to "cram" literature, against which there is a not altogether unwarranted prejudice. But it is really a book to be studied and carefully digested. It is very concisely written, and contains sixty-four lithographic plates and four process-pictures. For some of the plates the drawings were made from the living subject; for some, from museum specimens; and for some, lesions artificially produced upon the cadaver. It is these illustrations which constitute the Atlas. Each plate has a page of descriptive text. The process-pictures are reproductions of photographs from life.

The Grundriss (literally translated, ground-plan) consists of five sections. The first deals with the general subject of both classes of injuries. In the second fractures of the skull are discussed. The third is on the fractures and luxations of the bones of the face and chest; while the fourth and fifth are devoted to these lesions as affecting the upper and lower extremities respectively.

All these topics are set forth in succinct terms, but in a most practical manner. The author, whose name in well known in German professional literature, is obviously a surgeon of wide experience and of truly conservative views. We are quite sure that this product of his pen will be highly appreciated by all those whose familiarity with the language enables them to avail themselves of its teachings. We should be glad to welcome it in an English translation.

HEALTHFUL WOMANHOOD AND CHILDHOOD. By HENRY BIXBY HEMENWAY, A.M., M.D. 8vo., pp. 270, and Index. Evanston, Ill.: V. T. Hemenway & Co.

"IGNORANCE is not purity," says Dr. Hemenway in the introduction to his work, nor is it modesty. The time when the organic functions were shrouded from all but physicians, in a mist of medieval ignorance and superstition, and were popularly regarded with mingled feelings of curiosity and disgust, is well-nigh past. Intelligent men and women to-day are not ashamed to learn the physiology of respiration or digestion, and if the physiology of reproduction is approached with hesitation born of sensibility and diffidence, a sense of the profound importance of the knowledge prevails, and places its propriety beyond question.

In this book the author treats of the physical life of woman from girlhood to the climacteric: of menstruation, pregnancy, parturition, and many related matters, of embryology and the care of the child, and always in a delicate yet straightforward manner, and in untechnical language adapted to the comprehension of the nonprofessional reader. One may take occasional exception to a statement, or question the wisdom of detailing some of the information conveyed, but on the whole the book is simple, wholesome, and scientific. It merits the attention of physicians, and is to be recommended for the perusal of intelligent parents.

LANDMARKS IN GYNECOLOGY. By BYRON ROBINSON, B.S., M.D., Professor of Gynecology in the Chicago Post-Graduate School, etc. The Physician's Leisure Library. Detroit: George S. Davis, 1894.

PROFESSOR ROBINSON considers as the landmarks of chief importance in gynecology the following: Anatomy, menstruation, labor, abortion, gonorrhea, and tumors. The first four of these are treated in the present volume, the lectures being largely based upon personal work in dissections, from which are derived a number of original views and new classifications. Much that is valuable and instructive is set forth in an interesting manner, although some of the views held by the author are not in accord with the generally accepted teachings of the day. Thus, he believes in the supporting function of the uterine ligaments, and regards the gluteus maximus muscle rather than the levator ani as the muscle of copulation; he heartily indorses Tait's perineorrhaphy in preference to Emmet's operation. Nevertheless, the book is cleverly prepared and makes interesting reading.

ESSENTIALS OF DISEASES OF THE SKIN. By HENRY W. STELWAGON, M.D., PH.D., Clinical Professor of Dermatology in the Jefferson Medical College. Small 8vo., pp. 261, and Index. Revised edition. Philadelphia: W. B. Saunders, 1894.

IN the preface to this edition of his well-known compend the author says that in making "corrections and additions" the object has not been to extend the text and comparison with the earlier edition shows that this has been attained. The changes, including the additions, are purely revisory, and are based upon recent clinical observation and histologic investigation, as, for example, those on the pathology of seborrhea, the clinical characteristics of seborrheic eczema, the erysipeloid condition affecting the hands of butchers, having its origin in a wound and depending on infection from putrid flesh. Among the additions noted is a description of pityriasis rubra pilaris.

The illustrations of the former editions have been increased in number by the insertion of several new halftone plates, which, as usual, are only partially satisfactory. It is doubtful if even the best can convey to the uneducated eye an adequate impression of the configuration of the lesions they portray. They will, however, be useful to the student helping to fix in his mind their distribution.

DIRECTIONS FOR LABORATORY WORK IN BACTERIOLOGY. By FREDERICK G. NOVY, M.D., Sc.D., Junior Professor of Hygiene and Physiological Chemistry in the University of Michigan. 8vo., pp. 205, and Index. Ann Arbor, Michigan: George Wahr.

THIS book has been prepared for the use of students of medicine in the University of Michigan, and is designed as a guide to progressive laboratory work in bacteriology. The preliminary exercises are devoted to elementary technique—sterilization of apparatus, preparation of media and culture, staining for microscopic examination—and to the study of the morphology and classification, and the structure and vital manifestations of bacteria. These are followed by schemes for the systematic study of species. In each scheme the morphologic, biologic, cultural, and pathogenic characteristics are indicated, along with the source, historic data, and synonyms. The exercises include the examination of bacteria in water, soil, and air, in sputum and tissues, also methods of inoculation, post-mortem examinations, and the testing of antiseptics. The book is interleaved for the purpose of making sketches and additional notes, and as a supplement to the more elaborate treatise will no doubt be helpful to the student.

THE ELASTIC TISSUES OF THE SKIN: ITS DISAPPEARANCE AND REGENERATION IN RELATION TO PATHOLOGICAL PROCESSES. By DRS. PASSARGE and KROESING. Hamburg and Leipzig: Leopold Voss, 1894.

THIS brochure takes up and discusses the subject in a most thorough manner. A few practical points may be alluded to. The authors find that in all inflammatory and hyperplastic formations (new growths) the elastic tissue disappears in proportion to the intensity of the pathologic process present. It is especially damaged by the infiltration which occurs. It disappears in general only when infiltration has existed. The beginning of degeneration is shown through loss of staining power and a thickening of the caliber of the fiber, which ultimately ends in molecular destruction. Regeneration of the fibers, as concerns the lighter grades of the infiltrating processes, does not seem to take place.

TRANSACTIONS OF THE STATE MEDICAL SOCIETY OF WISCONSIN FOR THE YEAR 1894; vol. xxviii.

THE usual assortment of material is to be found in this volume of *Transactions*, which differs little from other publications of a like nature. Probably the most attractive features are the papers treating of the tonsils and their pathologic states, participated in by Drs. Farnham, Neilson, Rogers, von Szoldrski, and Waterman, and those upon conjunctivitis by Drs. Würdemann, Zimmermann, Bach, and Neymann. Dr. B. Robinson, of Chicago, contributes a paper entitled "Observations on Eighty Recently Performed Laparotomies."

NEWS ITEMS.

Munificent Gifts to Columbia University.—Within the last six weeks Columbia University has received gifts for new buildings representing more than a million dollars. In addition to the two buildings at Bloomingdale, for which $500,000 was given some time ago by as yet secret benefactors, provision for a number of buildings for the College of Physicians and Surgeons has been made by members of the Vanderbilt family, in the sum of $350,000. The Vanderbilt clinic on Sixtieth Street will be enlarged by the erection of a building five stories high and 100 x 50 feet. Another building, 50 x 80 feet, will be erected on Fifty-ninth Street, east of the present main building.

Another important gift in connection with the medical school is one of $200,000 from Mr. and Mrs. William D. Sloane for the enlargement of the Sloane Maternity Hospital to nearly double its present size. Mrs. Sloane has also agreed to provide the additional money necessary for the maintenance and endowment of the enlarged institution. The new building will have a front of seventy feet on Fifty-ninth Street.

These new buildings will completely fill the Fifty-ninth and Sixtieth Streets fronts of the block occupied by the medical school, and will provide an equipment for Columbia far in advance of any other American medical school. The architects are already at work on the plans, and construction will be begun without delay. The property and the main building of the College of Physicians and Surgeons were given by the late William H. Vanderbilt; the clinic bearing his name was erected as a memorial by his children, while his daughter, Mrs. Sloane, endowed the maternity hospital.

Examinations for Diphtheria-Bacilli.—It is announced that the Laboratory of Bacteriology of the Philadelphia Polyclinic will make for physicians bacteriologic examinations in cases of suspected diphtheria. Sterilized swabs and blood-serum tubes, together with instructions for making the inoculations at the bedside, can be obtained from Mr. W. S. Leffmann, Clerk of the Faculty at the Polyclinic Hospital, on Lombard Street, above Eighteenth. The results of the examinations will be reported within twenty-four hours from the return of the tubes to the Laboratory.

Request for Addresses.—We have been asked to announce that many members of the Class of 1879 of the Jefferson Medical College of Philadelphia are desirous of having a class reunion on the occasion of the fifteenth anniversary of their graduation. To fulfil this end members are requested to communicate at once with the President of the class, Dr. Philip R. Koons, Mechanicsburg, Cumberland County, Pennsylvania.

Electric Railway Ambulance.—In the city of St. Louis a street-car, with electric motor attachments, and having an average speed of twelve miles an hour, has been fitted up as an ambulance, to be sent to all parts of the city in response to calls.

BOOKS AND PAMPHLETS RECEIVED.

La Syringomélie Maladie Familiale. Par les Drs. Rene Ver-Hoogen and Paul Vandervelde. Extraite des Annales publiées par la Société royale des sciences médicales et naturelles de Bruxelles, t. iii, 1894.

Why Chronic Urethritis is Ordinarily Difficult of Cure, and an Efficacious Method of Curing It. By Bransford Lewis, M.D. Reprinted from the Tri-State Medical Journal, 1894.

Essentials of Diseases of the Ear. Arranged in the Form of Questions and Answers. Prepared Especially for Students of Medicine and Post-Graduate Students. By E. B. Gleason, B.S., M.D. Philadelphia: W. B. Saunders, 1894.

Addresses, Papers and Discussions in the Section on Surgery and Anatomy at the Forty-fifth Annual Meeting of the American Medical Association, held at San Francisco, Cal., June 5-8, 1894 Chicago: Printed at the Office of the Journal of the American Medical Association, 1894.

Acute Otitis Media, with Illustrative Cases. By Wilbur W. Bulette, M.D. Reprinted from the Medical Bulletin, 1894.

Incipient Inflammations of the Ear in Early Life, and their Sequelæ. By S. MacCuen Smith, M.D. Reprinted from the New York Medical Journal, 1894.

Can Physicians Honorably Accept Commissions from Instrument-Makers? By H. Augustus Wilson, A.M., M.D. Reprinted from the Philadelphia Polyclinic, 1894.

Skin-Grafting for Malignancy of the Orbit. By Flavel B. Tiffany, M.D., Kansas City, Mo. Pamphlet, 1894.

Tea and its Effects. By James Wood, M.D. Reprinted from the American Medico-Surgical Bulletin, 1894.

The Senile Heart; its Symptoms, Sequelæ, and Treatment. By George William Balfour, M.D. New York and London: MacMillan & Co., 1894.

The Medical Register of New York, New Jersey, and Connecticut, for the Year commencing June 1, 1894. Published under the Supervision of the New York Medico-Historical Society. John Shrady, M.D., Editor. Vol. XXXII. New York and London: G. P. Putnam's Sons, 1894.

Ueber die Beziehungen des Ekzems zu den Schleimhauten. Von Dr. von Sehlen-Hannover. Sonder-Abdruck. Monatshefte für praktische Dermatologie, Band xix, 1894.

The Effects of Ethyl Alcohol on the Affinity of Hemoglobin for Oxygen. By John Davis Kales, M.D. Pamphlet.

Laboratory Manual of Elementary Chemical Physiology and Urine Analysis. By John H. Long, M.S., Sc.D. Chicago: E. H. Colegrove & Co., 1894.

Appenti Sall 'Azione Fisiologica e Terapeutica Del l'Ittiolo. Dott. Angelo Ceconi. Estratto Dalla Gazzetta Degli Ospedali e Delle Cliniche. Anno, 1894.

Directions for Laboratory Work in Bacteriology. By Frederick G. Novy, Sc.D., M.D. Ann Arbor, Mich.: George Wahr, 1894.

Bread from Stones. A New and Rational System of Land Fertilization and Physical Regeneration. Translated from the German. Philadelphia: A. J. Tafel, 1894.

The Production of Diseases by Sewer Air. By A. Jacobi, M.D. Reprinted from the New York Medical Journal, 1894.

Transactions of the Medical Society of the State of New York, for the Year 1894. Published by the Society, 1894.

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ORIGINAL ARTICLES.

BRAIN-SYPHILIS: A REPORT OF SEVEN CASES.[1]

BY THEODORE DILLER, M.D.,
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THE study of brain-syphilis is always one of interest, chiefly because of the great variety and diversity of symptoms that may be noted in the affection and the endless difficulties encountered in the diagnosis. So eminent an authority as Professor H. C. Wood has stated (*American Text-book of the Theory and Practice of Medicine*, vol. i, p. 731) that "The diagnosis of cerebral syphilis during life is always a matter of inference." That is, I think, putting the matter too strongly. There are certain cases, I believe, in which one can feel as sure of his diagnosis as in any other form of intra-cranial disease.

Of the seven cases I am about to report (representing types of the disease), I feel very confident the first (Case I) was a genuine case of brain-syphilis. Case II had been diagnosticated by several physicians as one of paralytic dementia before the patient came under my observation. I debated in my own mind a long time on the matter of the differential diagnosis between paresis and brain-syphilis before I concluded that the case was one of the last-named disease. But even now I cannot feel certain of my diagnosis. Case III is one of brain-tumor, in which two features point to its being of specific character. Cases IV, V, and VI are somewhat similar and present features that point to syphilis rather than to any other affection. Case VII is undoubtedly syphilitic.

The more cases accurately recorded, the sooner will it be possible to formulate from the study of the literature certain general laws for diagnosis, and to test the value of those already promulgated. The number of cases already recorded is enormous, but we still need to study very many more. It is, perhaps, unnecessary to say that certain well-founded, well-tested laws of diagnosis are much needed.

When the structure and varied functions of the brain are borne in mind, it is not difficult to understand how the various syphilitic new-formations, and the consequences dependent upon them, found within the brain-case, produce such a great number and infinite variety of symptoms.

The syphilitic products are the results of specific inflammation, in all probability of bacterial origin. The vessels and the membranes, especially at the base, are affected by it. This specific inflammation leaves behind it general or nodular thickening of the membranes, gummata, arteritis (wholly or partly obliterating vessels), softening or patches of sclerosis (the results of obliterating arteritis). The degenerated vessels may rupture or thrombi may form within their roughened walls, or aneurysms may develop.

The common symptoms observed are headache, coma, somnolence, insomnia, dementia, and other psychic symptoms, paralysis, convulsions, polyuria, aphasia, and optic neuritis. Only one of these symptoms, *e. g.*, headache, may be present in a given case. Several of them may be present. The manner in which they appear, and the order and length of time they persist, vary greatly. It is, indeed, only by a study of these points that one is able to make a clear or even a provisional diagnosis.

Headache is perhaps the most common symptom. It was present in more than half of Gowers' cases (*Syphilis and the Nervous System*, p. 74). I have not found that it is confined to one part of the head. There is, however, in many cases, a marked tendency to periodicity, but I have not observed it so frequently as Gray (*American Journal of the Medical Sciences*, January, 1892, and *Nervous and Mental Diseases*, pp. 359–372). Headache may be the only symptom. In the absence of a specific history a positive diagnosis of syphilis cannot be made from this symptom alone, but in any case in which headache is severe and intermittent, and has lasted a long time, and has proved rebellious to ordinary treatment, it is certainly wise to suspect syphilis and administer specific treatment. When severe headache has existed for a considerable period, and is followed by some form of paralysis, or by convulsions or coma, there is much stronger ground upon which to base a suspicion of syphilis, especially when, with the appearance of these symptoms, the headache itself greatly abates or disappears. There may be hemiplegia, monoplegia, or more rarely paraplegia. Any of the cranial nerves may be paralyzed. The ocular nerves are very prone to paralysis; the facial is singularly exempt. The distinguishing feature of syphilitic palsies is that they are likely to be of gradual development, incomplete, and often rather suddenly improve or disappear. But paralysis, especially hemiplegia, may be sudden, although it is not likely to be so complete as the hemiplegia following hemorrhage. Paralysis slowly and successively involving different parts is strongly suggestive of syphilis. Hemiplegia in persons under forty-five years of age and over five years of age is likely to be syphilitic.

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[1] A paper read before the Pittsburg Academy of Medicine, November 5, 1894.

Insomnia in connection with headache is a frequent symptom. A semi-comatose or somnolent condition is to be observed in many cases even when headaches are severe. Most writers agree with Fournier, that convulsions appearing for the first time in persons over thirty years of age, and not due to traumatism or other demonstrable cause, should raise a strong suspicion of syphilis, particularly if severe headache has immediately preceded the convulsive outbreak. Coma or a semi-comatose state of long duration, and which cannot be accounted for on other grounds, should give rise to a strong suspicion of syphilis.

Mental symptoms are exceedingly varied, but perhaps stupidity and general intellectual failure are most commonly seen. This dementia differs from acute dementia and senile dementia in being slow in onset and progress, or by the time at which it sets in. It differs from paralytic dementia in the absence of lucid intervals and extravagant delusions of grandeur, and by the fact that the course of the disease is of much longer duration and not characterized by the same tendency to remission. There is, however, much resemblance between the two; for example, there are to be seen in both dementia, general paralysis, inequalities of pupils, speech-alterations, and tremors. Indeed, I believe there are many cases on the border-line in which it is impossible to make a distinction. Many observers, it must be remembered, now believe that paresis is nothing more than a form of brain-syphilis. These cases of so-called paresis have been studied by the French, especially by Morel, Lavalle, and Belieres (*Syphilis and Paralysie Générale*, Paris, 1889).

Syphilis may act as the predisposing cause of any of the acute insanities. The form of the insanity is determined by the environment and inherent tendencies of the patient. From the symptoms that these insanities present it is impossible to say that syphilis is the cause, and it can, of course, be suspected only when there is a specific history or some other features pointing to syphilis.

Polyuria and optic neuritis are symptoms of value only in connection with other manifestations indicative of syphilis. Optic neuritis may be primary.

Much stress has been laid upon the diagnostic value of the therapeutic test. While it is often of value, it has, I am sure, been given too much weight. It not infrequently happens that a course of specific treatment will cause the partial disappearance of symptoms dependent upon organic brain-disease (*e. g.*, tumor) other than syphilis. On the other hand, it often happens that treatment fails to produce the least effect when the disease is unquestionably syphilitic. The more rapidly the symptoms disappear under specific treatment, all other things being equal, the more likely is the disease to be syphilitic.

A clear and unmistakable history of syphilis is, of course, of the utmost value; yet, from the fact that a person has had a hard chancre at one period in his life, it does not necessarily follow, as many physicians seem to think, that any symptoms he may suffer from in after-life are of syphilitic origin. It is, therefore, not enough to base a diagnosis of brain-syphilis upon the history of chancre. At least some symptoms should point to it. Of course, a person cannot suffer from brain-syphilis without having within him, either through inheritance or infection, the syphilitic virus. Yet there are clear cases of brain-syphilis in which there is no history of inheritance or primary infection, and, indeed, in which both are positively denied. I believe, with Gowers, that there are many more such cases than is commonly believed.

Indeed, so unsatisfactory is the history of syphilis that I attach less and less importance to it, although of course the intelligence of the patient has much to do with the value of the specific history. There are some cases in which I believe it is best not to inquire into the matter at all. The mere question may cause heart-burnings or family discords that may last for years; for very often the physician is prepared to give anti-syphilitic treatment whether chancre is admitted or denied. These elements of uncertainty and unpleasantness about the specific history make it all the more desirable to secure, if possible, data upon which to base a diagnosis in the absence of a specific history. As the result of my own experience and a considerable search through the literature, I concur with Gray (*Mental and Nervous Diseases*, p. 369) in stating that we should suspect intra-cranial syphilis if there are present:

1. Quasi-periodic headache that returns at a certain time in the twenty-four hours, and is most frequent at or toward night, and less frequent in the afternoon or morning.

2. Paralytic or convulsive symptoms that have been preceded by this characteristic headache and insomnia, when the headache and insomnia have suddenly ceased upon the supervention of the paralysis or convulsion.

3. Symptoms indicative of a lesion at the base of the brain, preceded or not by the characteristic headache and insomnia.

4. Convulsions in the adult which have not been preceded by convulsions in infancy, and are not of traumatic or nephritic origin, or due to pregnancy, or occur in an individual subject to migraine.

5. Hemiplegia in an adult under forty years of age, even when there has been no preceding headache and insomnia.

6. A comatose condition extending over days or weeks, not traumatic, meningitic, diabetic, nephritic, or from typhoid fever.

To these I would add :[1]

7. Paralytic symptoms that are incomplete, slow in onset, unaccompanied by unconsciousness, and which quickly improve or disappear.

In the cases to be related, illustrations of all these laws excepting those pertaining to coma and convulsions will be found. I believe the most important diagnostic point is *the peculiar headache, when it has preceded paralytic, convulsive, or mental symptoms.* This feature is illustrated in all but one of these cases.

CASE I.—J. C. D., aged forty-two, single, a manufacturer of boats, has never drunk heavily, but has worked hard all his life. He contracted syphilis in 1877, and had pneumonia in 1878. After the syphilitic infection he had sore-throat, skin-eruption, and his hair came out. He went to Hot Springs to get specific treatment. About two years ago headaches set in, which became of daily occurrence; they were frontal and for the most part very severe. After three months of very great suffering, they left him. After this they frequently reappeared in great severity, but each attack lasted only a short time. Very soon after the appearance of this headache he suffered from a severe attack of influenza, upon recovery from which it was noticed that there was some bulging of the eyeballs. A few days later a little stammering and hesitancy of speech were noted. Then he became a little dull mentally, and memory for recent events became impaired. Generally speaking, he grew worse steadily for three or four months, and then deteriorated very slowly until the time I first saw him, November 11, 1893, except that the mental symptoms had been increasing rather rapidly for three weeks immediately prior to that date.

On November 11, 1893, the examination showed a large man, 5 feet 10 inches in height, weighing 210 pounds. He has weighed the same for ten years past; his appetite was good; he slept well; the bowels were regular. The dynamometer with the right hand registered 80, with the left hand, 95. The knee-jerks were normal; he had a slightly ataxic gait, not increased when the eyes were shut. Mentally he was quite dull and lethargic; speech was slow and halting, with considerable slurring of words. Besides, there was loss of memory for certain words which he wished to use—evidently a genuine aphasia. He was having no headaches, and no delusions or hallucinations. He was still able to attend to some business and travel alone from his home, some thirty miles distant, to this city.

I ordered ʒj of potassium iodid daily, divided in three doses, besides mercurial inunctions. The mercury was discontinued in about two weeks. The iodid was increased steadily for about one month, when he was taking 300 grs. daily, which amount was given for four months. On December 4th he was duller mentally. On December 6th he was taken to St. Francis' Hospital, and had a severe (malarial) chill. On December 29th there was slow but steady improvement. On January 9, 1894, he was a little worse. On January 14th he was growing steadily worse. The saliva was running from his mouth, and he could scarcely articulate a single word properly. It was doubtful whether he knew me. He was very noisy the night before, and dementia was profound; the left pupil was larger than the right. On January 17th there was no change. On February 1st there was steady improvement since the previous note, and on February 17th the improvement continued. On March 12th he was improving constantly, the memory was quite good; there was no aphasia, but speech was still somewhat slow. On April 2d he was discharged, practically well. I directed him to take 100 grs. of potassium iodid three times a day for the first week in each month during the remainder of the year. I saw him September 15th for the last time. He continued to remain well and to follow directions explicitly as to taking the iodid.

CASE II.—J. Z., aged thirty-seven, married, but whose wife has never borne children, denied syphilis. Mr. Z. led an active life as a politician; he was a cheerful, easy-going man, and always enjoyed, up to the time of the present trouble, excellent health. About four-and-a-half years ago it was noticed that he was getting somewhat careless in the discharge of his duties; that his judgment was not so good as formerly; and that he was becoming somewhat careless in the use of money. At this time and for some weeks previously he had been troubled much with headache. These mental defects increased slowly as months went by. He lost money by going into business schemes that were not considered sound, and yet which were by no means wild. He was compelled to give up business and political work; then he grew emotional; cried occasionally when vexed, and complained a good deal about trifling matters. He was sent to a sanitarium, where his trouble was diagnosticated as paralytic dementia. Returning to the city after a couple of months, he made a further business venture, but was again unsuccessful.

I saw him for the first time about six months ago. At that time he was cheerful and talkative; his memory was good, both for remote and recent occurrences; his dress was neat and tasteful. A careful search failed to discover any delusions. His speech was slow, somewhat halting, and there was some evident general mental failure. Several times, when contradicted, he seemed on the point of breaking into tears. He could not spell Pennsylvania correctly. In attempting to repeat "National Intelligencer" he would say "National Intelliger." His handwriting was unchanged.

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[1] I wrote to Dr. Gray concerning this point, and he replied: "I believe your seventh point about intra-cranial syphilis is a valuable one. I had never thought of it before you wrote, but your speaking of it calls up to my memory numerous cases in confirmation of your belief."

In the spring of this year, shortly after I first saw him, he was removed to St. Francis' Hospital, where he has remained practically unchanged up to the present time, having been three months of this time under my constant observation. He gets along very well in the hospital, constantly recognizing that he is a sick man and desiring relief. He is prone to magnify trifles, *e. g.*, was very much worried several times when he had a slight diarrhea ; cried because medicine did not come as soon as he expected ; cried several times when articles belonging to him were either mislaid or appropriated by other patients. He often complained of a certain distress in the head, the exact nature of which was never made clear to me. Habits of personal neatness remained unchanged. Dr. Edsall recently made an ophthalmoscopic examination, but found no changes in the eye-grounds.

Both of these cases bear much resemblance to paralytic dementia. The first may, I think, be distinguished from it by the clear history of syphilis; the violent headache that preceded the mental symptoms ; the nature of the mental symptoms themselves; the absence of expansive delusions; and lastly, the remarkable improvement under specific treatment, which has for months been maintained.

The second case is one much more difficult of diagnosis. It may even now be considered a debatable question, but I incline to the view that the case is one of intra-cranial syphilis, because of the headaches, the slow progress of the case, the absence of characteristic delusions of grandeur, the tidy habits of the patient, the fact that he uniformly recognizes that he is a sick man. There is here no syphilitic history to aid one in the diagnosis. Cases such as this have been, by Fournier and others, denominated pseudo-general paresis. Time will determine whether I am right in believing it to be such, or whether the case is really a slow, atypical form of paralytic dementia.

CASE III.—P. X. was seen September 9, 1894, referred to me by Dr. J. A. Lippincott, aged forty-seven, single, a university professor, small in stature and of a nervous temperament. Since the age of fourteen he has led a student's life, has drunk more or less all his life, drinking excessively in 1892. No specific history was obtainable. In May, 1892, Dr. Lippincott examined his eyes and found paralysis of the external rectus of the right eye. Both eyes were myopic and astigmatic. Both discs were swollen, with some tortuosity of the vessels. The right eye moved only a quarter of an inch beyond the center outward. During the summer of 1892 he was troubled a good deal by this diplopia. Some peculiarity in his gait was noticed about the same time. He would stagger, and, at times, have a tendency to go to one or the other side. About the same time the diplopia appeared he began to suffer from paroxysms of headache. Headache, diplopia, and uncertain gait have continued up to the present time. He himself attributed the uncertain gait to his double vision.

Last winter (1893-94) considerable improvement took place, which, however, lasted only a short time. Headaches returned with greater severity than ever, and diplopia annoyed him exceedingly. For a while he veered to the right side in walking, afterward to the left side. The gait was shuffling, the feet wide apart. Vision began to leave him rapidly. By February (1894) it had entirely faded from the right eye, and by the middle of August from the left. A month ago Dr. Milliken, of Cleveland, examined his eyes and reported almost complete atrophy of both optic nerves. About this time he was having, and now has, from four to eight paroxysms of headache, each lasting about ten minutes, in the twenty-four hours. In about one of six attacks he vomits. This vomiting is always sudden and is preceded only by a momentary feeling of nausea, and apparently stands in no relationship to previously-ingested food. The head-pains are frontal and occipital. In many attacks the frontal pains alone are present. When there is occipital pain there is always more severe frontal pain at the same time. It is alike on both sides. On August 16th and September 18th he suffered from attacks of syncope, lasting about fifteen minutes, preceded by vomiting. There was delirium and more or less mental confusion for an hour or two following these attacks. Examination September 18, 1894, showed that the man could not carry the right margin of the cornea of the right eye more than half the distance to the external canthus. The pupils were widely dilated, and there was total blindness of both eyes. There was general weakness, but no local paralysis; the dynamometer showed—R., 48, L., 35. Pain-sense was present, and there was general dulling of tactile sensation. Hearing in the right ear was greatly impaired. (This has been so for many years.) Taste was very defective, and he could not distinguish salt from sugar, but he recognized vinegar. It has been noticed for several weeks past that apparently all foods tasted alike to him. The sense of smell was almost absolutely abolished, and he was utterly unable to distinguish a number of common odors. The patient was unable to say just when the sense of smell left him, but stated that it left the right side before the left. Both knee-jerks were exaggerated, the right distinctly more than the left. No mental defect was appreciable. On September 29th his family physician wrote that there was some little improvement, and the headaches not so severe or frequent.[1]

Headache, optic neuritis, followed by atrophy, and vomiting, point to the presence of intra-cranial tumor. The sixth-nerve palsy on the right side, existing from the beginning of the trouble, and the absence of the sense of smell, which developed first on the right side, led me to localize the growth at the base of the brain on the right side near the median line, about the junction of the frontal and temporal lobes. The fact that vision faded from the right eye for several months before it did from the left would also favor this view.

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[1] His condition has since deteriorated very much.

There is no history of syphilis. I can only suspect that the growth is a gumma from the early appearance and violence of the headaches and the belief that the growth is situated at the base of the brain.

CASE IV.—W. B., aged eight years, was seen September 29, 1894, referred to me by Dr. Joseph Dickson. His parents, brother, and sister were healthy. No specific history was obtainable, but there was a suspicious appearance of the teeth. The boy had always been healthy up to nine weeks before, when he complained vaguely of not feeling well. A doctor was called who prescribed for him. The lad got better, although not quite himself, and remained so for two weeks, when he returned from play one day saying he was sick, but complained of no special symptoms (this was seven weeks before). That night he awoke with a bifrontal headache so severe that he cried out. It lasted half an hour, when he went to sleep and slept until morning. Immediately upon awakening he complained of severe frontal headache. Every day thereafter for three weeks he suffered from frontal headache from morning until night. No other symptom was present. He was free from headache and slept at night during this period. At the end of three weeks the headaches left him, and, excepting two attacks, did not return in the following four weeks. Just at the time the headaches ceased his mother noticed that there was some loss of power in the left leg. A week later it was noticed that the left arm was losing power, the paralysis in the leg having, in the meantime, increased. The loss of power in the arm increased rapidly, so that two weeks from the onset it was absolute. The paralysis of the leg proceeded more slowly, and for the past two weeks has remained stationary. At the time the arm-palsy began, the boy, for the first time, misnamed objects and dropped words and letters in talking, his speech being halting and slurring. About the same time he became dull, listless, lethargic, and very soon afterward sight began to fade from both eyes. These symptoms have increased up to the present time. His mother states he has grown much worse even in the past two days.

On the day I saw him the paralysis of the left side was present as noted; but there was some evident weakness of the right side too. The boy was unable to walk; his face was dull and he was listless; saliva dribbled; his pupils were dilated; sight was almost absent; the knee-jerk was present, but sluggish. Dr. Edsall found distinct optic neuritis in both eyes, more marked in the left, and vision was almost gone. Inunctions of mercury and scruple doses, t. d., of potassium iodid were ordered.

As I write I have just received word from his family physician, Dr. Jamison, of McDonald, saying that there has been steady improvement since I saw him.

Here we have an incomplete hemiplegia of slow onset; aphasia and great mental hebetude, immediately preceded for three weeks by agonizing headache. A syphilitic history is wanting. Specific treatment causes prompt and unmistakable improvement. That these symptoms were due to congenital syphilis can scarcely be doubted.

CASE V.—October 9, 1894, I saw Mrs. M., in consultation with Dr. Larimer; her age was forty-five; she was married; had no children; she had a miscarriage sixteen years ago, eight years after marriage. She has never been in robust health, but got along fairly well. Her present illness dates from about January 1, 1894, at which time she began to suffer from headaches. These were more or less periodic (worse toward night) and much of the time very severe, even agonizing, causing her to cry out. She was scarcely free from them a single day. A couple of months ago a boil appeared one-half inch below the external canthus of the left eye. This subsided after a time, but remnants of it are even now apparent. These were the only symptoms till about seven weeks ago, when her left arm began to lose power. At the same time the headaches left her. This loss progressed evenly for about one week, at the end of which time the member was completely paralyzed and has remained so ever since. A few days after this paralysis in the left arm had appeared the left leg began to lose power, and the loss progressed for about ten days, since which time the leg has slowly regained power up to date, October 9th. Yesterday morning (8th) she felt a numbness or tingling in the fingers of the right hand. This morning there was a distinct and marked loss of power in the right arm (not absolute), and at the same time the patient, for the first time, experienced difficulty in talking, not being able to utter more than a few words, and miscalling objects and persons; she evidently knew what she wished to say, but could not utter words for the idea, giving affirmative and negative by shakes of the head.

Examination the evening of October 9th showed that the woman seemed sixty instead of forty-five years of age; her hair was white; and there were redness and puffiness about the left eye. There was almost complete aphasia. She apparently understood what was said; pain-sensation was present; she felt the touch of a finger on various parts; there was no discoverable sensory disorder; the left hand was puffy and white; the fingers closed; the arm contracted at the elbow and wrist, and paralysis was absolute; she could move the right arm in all directions, but there was a marked loss of power; she walked with a little assistance, dragging the left foot heavily. We prescribed 15 grains of potassium iodid, t. d., to be increased 1 grain a day, and mercurial ointment each morning. On the 10th the aphasia became absolute; on the 13th she began to lose power in the right leg, and this loss increased until the 16th, when it became absolute. During the last twenty-four hours there has been some appreciable regain. No special change was noted on the left side. She evidently knew what was said, but would nod head for negative and affirmative. She refused to put out her tongue when asked, simply opening the mouth, but to-day she protruded it, although a second time she would not do so. (Hysterical element.) She made known calls of nature by restless movements in bed. She objected strongly to the iodid. Dr. L. stopped it two days ago and gave her strychnin.[1]

Here we have, as in the preceding case, paralytic symptoms of slow onset unaccompanied by unconsciousness, preceded for months by severe headaches. Dr. Larimer and I both thought it best not to search for a syphilitic history in this case. Specific treatment has as yet effected no improvement; notwithstanding this I feel pretty sure that this is a case of syphilitic arteritis and meningitis.

For a time I feared softening was taking place. The shifting nature of the paralysis and apparent hysterical symptoms are interesting features. Hysterical symptoms may, it is well known, be engrafted upon grave organic disease (see cases reported in *Medical Record*, 1894, by Dr. Philip Zenner and myself). Pure hysteria can be thrown out, I believe, by the facts that trophic changes and contractures are present in the left arm; that aphasia appeared simultaneously with the right-arm palsy, and that severe headache preceded for months the paralytic symptoms.

Case VI.[2]—A. G. came to the Pittsburg Free Dispensary May 15, 1894. His age was forty-one; he was married and a tanner by trade. Eleven years ago he had a sore on his penis, which he believed was a chancre. On May 20, 1893, while at work, he became giddy; then half an hour later he suffered from a severe pain across the forehead. Consciousness was preserved, but he lost vision on the left side. He walked home from the tannery that night alone. Four days later, paralysis of the left side slowly appeared and increased. For seven weeks the paralysis was so severe that he could not walk. He has never lost sensation in the paralyzed parts. The field of vision was normal; the grasp of the left hand is one-fifth that of the right. The paralysis was more marked in the arm than in the leg; the face was slightly drawn to the right side, and there was atrophy of the paralyzed muscles; there was general dulness of tactile and painful sensibility; the patellar tendon-reflex was increased on the affected side.

The history of syphilis, the slow onset of the hemiplegia, with preservation of consciousness, and the age of the patient, are points that led me to believe that the symptoms were of syphilitic origin. The apparent loss of vision in the left eye was probably due to a left hymonymous hemianopsia. Antisyphilitic treatment proved ineffective.

Case VII.[1]—A man aged thirty nine was referred to me by Dr. Robeson, November 12, 1894; he was married and had always enjoyed good health. Five years ago he had a chancre, followed by a "reddish" skin-eruption. Three years ago, for a period of four weeks, he suffered most agonizing headaches, which would come on about four o'clock in the afternoon and last nearly all night. One year ago last spring, while apparently enjoying excellent health, he was seized with a general convulsion which lasted one hour, during which he was unconscious, frothed at the mouth, and bit his tongue. The second day after the fit he resumed his work and continued at it, in his apparent usual health, until April, 1894, a period of one year. At this time he was suddenly seized with an attack of vertigo, which lasted twenty minutes, and during which he was "numb" on the left side. A short time later, an attack of left-sided "numbness," lasting nearly a day, occurred. A couple of weeks later (June 1st) he staggered in walking. At the same time memory and general intelligence began to fail, *e. g.*, an hour after dinner he would ask for the meal, forgetting he had eaten. He became increasingly drowsy, and he would sleep after dinner, at his desk in his office. He would go to sleep at almost any time or place. Toward July 1st he would sleep almost the whole twenty-four hours of the day. At this time delusions and hallucinations appeared About the middle of July he was seized with another convulsion, immediately following which he was confined to his bed for six weeks, being in a condition of stupor; much of the time he did not know his wife. During all the six weeks the stupor lasted he complained very often of severe headache, and during this time he had six convulsions. There was almost constant conjugate deviation of the eyes to the left. After he had been in bed five weeks (during which time his bowels had not been moved) the homeopathic physicians who had been attending him pronounced the case entirely hopeless, diagnosticating paresis.

At this time the patient's wife was counseled by a nurse living in the neighborhood to supplement the diluted Hahnemann treatment by a large strong rectal injection of glycerin and water. This was done, and according to the wife's statements, the results were not homeopathic, for a mass of matter came away from the bowel so offensive in character that it became necessary to open the windows and disinfect the room. For one week afterward there was an almost constant flow from the bowel, and *pari passu* improvement in symptoms, so that at the end of the week the change was marvellous, the man declaring that he was almost ready for work. The six weeks of stupor are now a blank in his memory.

Upon getting out of bed he noticed that he was blind on the right side. With this exception, he thought himself well until two weeks ago, when he began to lose power on the right side of the face, so that he could not close the eye. About the same time, or a little before, he would occasionally see double. This trouble increased up to the time I saw him.

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[1] Since this was written the patient has greatly improved.

[2] Reported in the proceedings of the Allegheny County Medical Society.

[1] The report of this case has been added since the paper was read.

Examination (November 12, 1894) revealed right homonymous hemianopsia (accounting for the right-sided blindness), total paralysis of the sixth nerve on the left side (accounting for the diplopia), and marked although not complete paralysis of the right facial nerve. No changes in eye-grounds, according to Dr. Robeson, were found. There were no other symptoms worthy of note.

He has now (November 19th) been on vigorous antisyphilitic treatment for two weeks, and shows very marked improvement. The sixth-nerve palsy and consequent diplopia have almost entirely disappeared, while the improvement of the seventh-nerve palsy has been almost equally marked.[1]

This case presents almost the entire catalogue of symptoms seen in intra-cranial syphilis, and lends force to nearly all of Gray's indications. To recapitulate briefly: There were chancre, severe headaches with marked periodicity, convulsions, somnolence, psychic symptoms, stupor with headaches, so to speak, protruding through it; cranial-nerve palsies (one of which was incomplete) of slow onset, numbness, and conjugate deviation of the eyes.

The wide range and inharmonious grouping of symptoms in this case are of themselves features of diagnostic value.

On the whole the case is more instructive than any of the others described. I think no one will question that it is one of brain-syphilis. A diffuse arteritis and gummatous meningitis affecting especially the base would most plausibly account for the symptoms, for they could not have been due to a single lesion.

The prognosis is most favorable when symptoms are produced by active inflammatory syphilitic exudate. In the words of Gowers (*op. cit.*, p. 97), "The tissue-formation of syphilis is the element that can be influenced with the most frequency, with the most certainty, and in the greatest degree." It must be borne in mind that the syphilitic inflammation causes secondary changes, *e. g.*, indurations, sclerotic patches, and softening. Many of these are almost wholly incurable and entirely beyond the reach of anti-syphilitic remedies. A severe syphilitic lesion within the brain-case leaves behind cicatrices, scar-tissues, representing a loss of some tissue and impairment of others. Similar after-effects are seen in the skin, the liver, and other organs. For these reasons one would certainly be unwarranted in giving a uniformly favorably prognosis in cases of undoubted intra-cranial syphilis. As a matter of fact, some cases are not at all amenable to treatment. Strictly speaking, all cases are incurable in the sense that we can never drive the virus out of the system. But, for all practical purposes, many cases are relieved of their symptoms with wonderful rapidity under specific treatment. On the whole, the prognosis is probably more favorable than in any other organic brain-disease. "Syphilitic hemiplegia has not a much better prognosis than hemiplegia from other causes," says Dana (*Text-book of Nervous Diseases*, p. 401). Case VI illustrates this point. Case II received a long course of iodids without the least benefit. Cases I, IV, and VII illustrate in a striking way the favorable results of treatment. Cases III and V have been under treatment too short a time to enable me to form an estimate of the value of the treatment.[1]

My views concerning the treatment are in accordance with those of most American neurologists, viz.: that in potassium iodid in large doses we have our chief remedy. When the small doses of the English, Germans, and French prove inefficient, I believe the large doses given in this country will often effect great improvement. Generally speaking, it it is best to begin with a dose of ten or twenty grains, and rapidly increase either by a grain each day or a grain each dose until iodism occurs, or the symptoms are yielding, or a certain maximum has been reached. Seldom is anything to be gained by exceeding one ounce in the twenty-four hours. In most cases I do not exceed 360 grains in a day. I have, however, given as much as an ounce-and-a-half, and Dana (*Text-book of Nervous Diseases*, p. 402) has known 500 grains to be taken three times a day with benefit. Hirt, a careful German writer, who reflects the views of his countrymen, speaks of the value of administering the iodids energetically, and mentions two drams as a maximum daily amount. (*Diseases of the Nervous System*, p. 659.) This dosage is, I am sure, often inadequate.

There is nothing to be gained and something to be lost by keeping up the administration of large doses of iodids indefinitely when there is no sign of improvement. If symptoms do not yield in three or four months, the drug should be discontinued, for it may have a harmful effect in depressing the general health. When symptoms have yielded to the drug it should also be discontinued for a time. To forestall a subsequent outbreak of the disease it is much better to administer the drug for short periods from time to time than to keep up its use continuously for months, even in small doses. It is a good plan to give it for a week in each month or for two or three weeks, four times a year. A practical little point in the administration of the iodid is to give it well diluted in water. Given in this way it is more readily absorbed from the stomach and is less likely to produce gastro-intestinal irritation.

What place has mercury as a remedy against these late lesions of syphilis? I believe, with the majority, that it is not nearly so valuable as the iodid, but I would, by no means, go as far as Gray in practically discarding it altogether. (*Nervous and Mental Diseases*, p. 370.) Wood, on the other hand, uses it "more and more" (*op. cit.*, p. 732), following it up after a time with the administration of potassium iodid for the purpose of eliminating the mercury.

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[1] Excepting the hemianopsia not a symptom remains.

[1] Case III has become much worse, while Case V is greatly improved.

It is my custom, in beginning treatment, to give mercurial inunctions along with the iodid for a week or two, and then drop them, continuing the iodid alone in the ascending doses. In cases in which there seems to be danger to life, the mercurials should be given vigorously at the start and maintained until slight salivation is produced. Whether there is any special virtue in the much-vaunted hypodermic method I am unable to say, not having any experience in this method; but I must confess that the plan does not recommend itself to me.

The administration of the iodids and mercurials does not, by any means, constitute the only means to be employed in brain-syphilis. The general condition of the patient must be studied as carefully as in any other disease. Baths, electricity, tonics, and massage may be indicated. It is desirable in all cases that the patient should have rest and be freed from cares and anxieties as far as possible. Foreign travel or sojourn from home may be recommended for some.

WESTINGHOUSE BUILDING.

THE EFFECT OF THE LOCAL APPLICATION OF GUAIACOL IN THE REDUCTION OF THE TEMPERATURE IN TYPHOID FEVER.

BY H. G. McCORMICK, M.D.,
OF WILLIAMSPORT, PA.

IN a conversation I had last spring with Dr. J. Solis-Cohen regarding a case of pulmonary tuberculosis with a high temperature, he suggested the use of guaiacol locally applied for its reduction as a remedy that had proved useful in his hands.

When I entered upon my term of service as attending physician to the Williamsport Hospital, the first of September last, I determined to give this remedy a good and fair trial in the reduction of temperature in typhoid fever. I had it applied 230 times in the hospital and 43 times in private cases, making 273 times it was applied under my direction in three months. These applications were made to 12 different persons, 7 males and 5 females, making an average of about 24 applications to each person. The greatest number of times it was applied to any one person was 70, and the least number of times it was applied was once; the largest dose used was 25 drops, and the smallest dose used was 2 drops; the greatest reduction of temperature was from 106.8° to 101°, by the application of 5 drops, in the case of Mrs. Horton, with a corresponding reduction of the pulse from 136 to 110 per minute. Again you will notice in the same case, by applying 5 drops on the same day when the temperature was 106.2°, with a pulse of 148, it was reduced in one hour to 102°, and the pulse to 120 per minute. This patient, as you may see by consulting the special reports, was unusually susceptible to the action of this drug, as the application of 2 drops when the temperature was 103° and the pulse 130, in one hour and thirty minutes reduced the temperature to 100.4° and the pulse to 120, while in the case of James Hill 20 drops were required to reduce the temperature from 104° to 98.4° in three hours and fifteen minutes.

I show you a large number of special reports of the cases in which guaiacol was applied, and which may be useful in showing not only its effect on the temperature, but also the effect on the pulse and respiration. You will observe that within thirty minutes after the application there was a fall in the temperature, and in most cases there was a corresponding reduction in the number of heart-pulsations per minute. The method of application was as follows:

The right iliac region was thoroughly cleansed with soap and water, and, after being dried, the guaiacol was slowly dropped upon the part and thoroughly rubbed in with the hand for from ten to fifteen minutes. The part was then covered with oiled silk. The only preparation used was that prepared by Merck, and it did not fail in a single instance to produce the desired result. Any other point would probably be as good for its application, but as it was as near the seat of the disease as I could possibly get, and the ease with which it could be reached and covered with the oiled silk without in any way disturbing the patient, made me select this point for its use.

The effect of guaiacol lasts from three to four hours, and the more often it is used the greater the effect. I observed a number of chills from the sudden reduction of temperature, but after I became more accustomed to its use the chills were much less frequent. If it can be avoided, the temperature should not be reduced below 100°, which can easily be regulated after the applications have been made a few times, care being taken to commence with a small dose, say 10 or 15 drops. I have never found it necessary to use the large doses of 40 or 60 drops as employed by Dr. DaCosta.

It has been suggested that by this rapid reduction of temperature there is danger of producing congestion of some of the internal organs of the body. I have not seen a single unfavorable symptom (except the occasional chill) follow its use.

All of my cases recovered. There was but one case of pneumonia-complication, and this could in no wise be attributed to the guaiacol, as it came on six days after the last application had been made. Sweating nearly always followed the application, being more severe when the reduction of temperature was sudden than when it was more gradual. No marked depression followed; the pulse was lessened in frequency and decidedly improved in strength.

No irritation of the skin followed when the guaiacol was used alone, and patients never objected to its use. The disagreeable odor that has been described by some as being objectionable to patients was never referred to by but one, and then only on the first application.

I used guaiacol and eucalyptol combined in the proportion of one of the former to two of the latter a number of times, but believe I had better results with the guaiacol alone. Besides, eucalyptol produces decided irritation of the skin, and in no way adds to the efficacy of the guaiacol.

This drug when applied to a person having a normal temperature produces no effect either upon the general condition of the individual or upon his temperature, as shown by an appended chart.

When I was following these investigations I had no knowledge of guaiacol having been used locally for the reduction of temperature in typhoid fever, but on looking over the literature of the subject I found that Dr. DaCosta used it in a few cases in the Pennsylvania Hospital last spring.

It is asserted by therapists that guaiacol is eliminated by the lungs and kidneys. In my cases treated with it repeated examinations of the urine were made by the resident physician, with negative results so far as the finding of the drug was concerned. It was at times noticeable on the breath.

In the carrying on of these investigations I received material aid from Dr. H. C. Frontz, resident physician, to whom I wish to return my thanks.

In summing up this question I feel convinced of the following facts:

1. That guaiacol when locally applied is certain to reduce temperature.
2. That with the care that a physician should always use in the administration of drugs, it is absolutely safe.
3. That chills will not occur if the temperature is not reduced below 100° Fahrenheit.
4. That no deleterious effect is produced upon any of the organs by its use.
5. That it is easy to apply, and can be used by any one competent to nurse a typhoid-fever case.
6. There are no depressing effects following an intelligent use of the drug.
7. That by continued use the dose can be gradually lessened.
8. That it is far superior to the cold bath; that it can be used by one person; that no appliances are necessary for its use that are not obtainable in every house; that it is much more pleasant to the patient; that it is fully as effective; that patients are not subjected to the danger of moving, and they offer no resistance to its use.

I have thoroughly tried the bath and cold packs, and I know they have proved very efficacious in many cases, but with my experience with guaiacol I have no desire to return to either of them.

SPECIAL REPORT.

Patient.	Date.	Hour.	Pulse.	Temp.	Resp	Guaiacol.
Mrs. Horton	Nov. 27	4 00 P.M.	120	104.2	24	gtt. xv.
		4.30	122	103.6	34	
		5.00	114	99.8	34	
		6.00	92	99	34	
	Nov. 28	1.00 A.M.	120	105.2	30	gtt. x.
		2.30	110	101	30	
		3.00	100	100	28	
		7.00	126	103.6	30	gtt. x.
		7.30	114	102	26	
		8.15	108	99	26	
		9.00	had a chill.			
		9.30	138	106	36	gtt. v.
		10.15	130	104.4		
		10.35	120	103.1	32	
		11.15	120	101.6	30	
		12.00	very severe chill lasting ½ hr.			
	Nov. 29	12.45	136	106.8	...	gtt. v.
		1.00	136	106	36	
		1.30	128	104 6	32	
		2.00	118	102.6	30	
		2 45	110	101	28	
		9 45	144	107	40	gtt. v.
		10.20	132	104.2	30	
		10.50	132	102.2	32	
	Nov. 30	12.40 P.M.	148	106.2	40	gtt. v.
		1.15	134	103	36	
		1.45	120	102	30	
	Dec. 12	7.00	120	103	26	gtt. ij.
		7.50	120	101.6	26	
	Dec. 14	9.15 A.M.	130	103	30	gtt. ij.
		10 45	120	100.4	28	

TRIAL REPORT (with normal temp.).

Patient.	Date.	Hour.	Pulse.	Temp.	Resp	Guaiacol.
Mike McGinly	Dec. 14	3.15 P.M.	64	98	22	gtt. xv.
		3.45	64	97.8	20	
		4.15	62	98	18	
		4.45	63	98 2	20	
William Scott	Dec. 4	8.45 P.M.	144	106	26	gtt. xx.
		9.25	129	103.6	26	
		10.00	124	102	26	
		10.45	124	101	24	
	Dec. 21	7 20	112	102	24	gtt. viij.
		8.10	100	98.6	24	
Emma Lover	Oct. 1	9.00 P M	126	103.8	....	gtt. xx.
		9.30	118	103		
		10.00	118	101		
		10.30	114	100.4		
	Oct. 2	3.00 A.M.	120	103.6	....	gtt. xx.
		3.30	102	102		
		4 00	100	101.2		
		4.30	104	100.8		
		8.00 P.M	118	103	...	gtt xx.
		8.30	110	101.6		
		9.00	108	101		
		9.30	110	101		

Special Report.

Patient.	Date.	Hour.	Pulse.	Temp.	Guaiacol.
James Hill	Sept. 30	7.15 P.M.	96	103.4	gtt. xxiv.
		7.45	100	103.6	
		8.15	107	101.8	
		8.45	104	101.8	
		9.15	97	100.6	
		11.00	106	104	
		11.45	112	105	gtt. xxv.
		12.00	98	102.4	
		12.30	102	100.3	
		1.00	92	101.8	
		1.30	92	100	
	Oct. 1	9.30 A.M.	106	103.8	gtt. xviij.
		10.00	100	102.4	
		10.30	100	101.6	
		11.00	100	101.4	
		11.30	100	101.4	
		12.00	96	100.8	
		1.00	92	101.6	
		4.00 P.M.	100	103.6	
		5.45	100	103.6	gtt. xxv.
		6.15	100	103.4	
		7.00	100	100	
		7.45	80	98	
		10 00	90	100	
	Oct. 2	12.00 A.M.	96	103 8	
		12.30	120	112	gtt. xx.
		1 00	118	102	
		2 00	...	99.2	
		3.00	90	98.8	
		6.00	97	100	
		8.00	100	100.6	
	Oct. 8	5.00 P.M.	100	104	gtt. xx.
		6 30	100	102	
		8.00	86	101	
	Oct. 9	6 45 A.M.	103	103	gtt. xx.
		7.15	100	100.2	
		8 00	100	98.4	
		10.00	100	99.4	
		1.30 P.M.	114	104.2	gtt. xx.
		2.15	106	101.2	
		2.45	106	100.2	
		3.15	100	100.6	
		3.40	100	100.2	
		10 45	100	103 6	
		11.15	103	101.6	
		11.45	109	100	
	Oct. 10	8.30	110	103.2	gtt. xx.
		9.15	110	102	
		10.00	112	100	
		10.45	112	98.4	
		11.30	113	99	

Special Report.

Patient.	Date.	Hour.	Pulse.	Temp	Guaiacol.
James Hill	Sept. 24	2.00 P.M.	100	103.4	gtt. xxv.
		2 30	96	102.8	
		3.00	96	101.2	
		3 30	94	99.4	
		4.00	94	99.4	
		4.30	92	99.4	
		5 30	90	100.6	
		6.00	100	104	gtt. xx.
		6.30	106	103 8	
		7.00	100	102.8	
		7.30	104	101	
		8 00	90	101	
		8.30	100	100	
		9.15	117	98.4	

Special Report.

Patient.	Date.	Hour.	Pulse.	Temp.	Resp	Guaiacol.	Eucalyptol.
Miss Saxton	Sep.30	7.15 P M.	130	104	...	gtt. xxv.	...
		7.45	126	101			
		8.15	128	101.2			
		8.45	118	101			
		11.15	120	103.6	...	gtt. xxv.	...
		11.45	116	102.4			
		12.15	118	101			
		12.45	122	100			
	Oct. 1	9.45 A.M.	120	103	...	gtt.xx.	...
		10.15	120	102	22		
		10.45	120	102	28		
		11.15	120	104.8	26		
		12 45 P.M.	120	104	...	gtt.xx.	...
		1.15	122	104			
		1.45	116	102			
		2.15	112	99.4			
		4.30	124	99.4			
		6.45	125	103 6	...	gtt.xx.	...
		7.15	120	102.2			
		7 45	110	101			
		8.15	106	99.2			
	Oct. 2	1.30 A M	126	104	...	gtt.xx.	...
		2.00	124	103			
		2.30	112	101			
		3.00	116	102			
		3 00 P M	120	103.6	...	gtt.xx.	...
		3.30	120	103.6			
		4.00	...	101.8			
		4 30	124	101 2			
		5.00	120	100.2			
		6 00	...	99 2			
	Oct. 3	10.00 A.M.	116	102	...	gtt.xv.	...
		11.00	125	101.6			
		11.30	120	101			
		12.00	125	101 4			
		5 00 P.M.	126	102.6	...	gtt.xv.	...
		5.30	120	102.6			
		6 00	120	101.4			
		6.30	116	101			
		7.00	110	101			
		11.00	126	103.2	...	gtt.xx.	...
		11.30	126	103.2			
		12.00	120	102			
		2.00	104	100.8			
		3.30	112	99			
	Oct. 6	9.00 P.M.	120	104 2	...	gtt.xx.	...
		9.30	116	103.2			
		10.00	112	102			
		10.30	108	101			
	Oct. 7	5.45 A.M.	122	106	...	gtt.xx.	...
		6.15	120	103			
		6.45	116	102.6			
		7.15	112	101.2			
	Oct. 8	5 30 P.M.	118	103 6	...	gtt.xx.	...
		6.00	100	102.1			
		6.30	118	102			
		7.00	110	102			
		7 30	112				
		8.00	120	103.6	...	gtt.xx.	...
		8 30	120	103			
		9.00	118	102.6			
		9.30	110	101			
		11 00	126	104	...	gtt.xx.	...
		11.30	124	103.8			
		12.00	116	102			
		12.30	112	101			
	Oct.9	9.00 A.M.	114	103.4	...	gtt.xx.	...
		9.30	112	102.8			
		10.00	112	101.4			
		10.30	110	101			
		11 00	100	100			
		11.30	100	99			
		12.00	98	98 6			
		12. 0	96	98.4			
		7.00 P.M.	112	103.4	...	gtt. x.	gtt.xx.
		7.30	110	102			
		9 00	123	104.6	...	gtt. x.	gtt.xx.
		9.30	120	104			
		10 00	114	103			
		10.30	110	102.6			

SPECIAL REPORT.

Patient.	Date.	Hour.	Pulse.	Temp.	Resp	Guaiacol.	Eucalyptol.
Miss Saxton	Oct. 10	3.20 A.M.	120	103	...	gtt. x.	gtt.xx.
		3.40	116	102.4			
		4.20	114	102			
		4.40	112	101.2			
		2.30 P.M.	120	103	...	gtt. x.	gtt.xx.
		3.00	104	101.4			
		3.30	102	90 2			
		4.00	106	98.6			
		4.30	104	98.2			
		5.00	100	98			
		5.30	84	97.4			
		9.30	120	103.6	...	gtt. x.	gtt.xx.
		10.00	116	102			
		10 30	112	101.6			
		11.00	114	100.4			
	Oct. 11	11.00 A.M.	118	103	...	gtt. x.	gtt.xx.
		1.30	118	102.4			
		2.00	112	101			
		2.30	110	100.4			
		3.00	100	99			
		4.00	92	98			
		5.20	90	97.4			

SPECIAL REPORT.

Patient.	Date.	Hour.	Pulse.	Temp.	Resp	Guaiacol.	Eucalyptol.
W. Edwards	Oct. 6	6.30 A.M.	96	101.2			
		7.00	84	101.2			
		2.00 P.M.	96	103.6			
		2.30	96	102.8			
		6.30	98	104.4	...	gtt.xx.	...
		7.00	90	102 4			
		8.00	86	101.8			
	Oct. 7	5 15 A.M.	80	103	...	gtt.xx.	...
		5.45	96	101 6			
		6.15	105	100 4			
		6.45	105	99 6			
		5.15 P.M.	110	104 4	...	gtt.xx.	...
		5.45	108	103 8			
		6 15	100	101.2			
		6 45	96	100			
		11.15	120	104.6	...	gtt.xx.	...
		11.45	112	104			
		12.15	90	101 8			
		1.06	90	99.6			
		2.00	90	99.6			
		4 00	120	104	...	gtt.xx.	...
		4.35	90	103			
		5.00	90	101.4			
		5.05	88	101			
		5.45	110	98.2			
		6.45	90	99.2			
	Oct. 8	10.00 P.M.	120	104 2			
		11.00	100	101.6			
		4.00	120	105.2	...	gtt.xx.	...
		4.45	110	101.8			
		8.45	100	104	...	gtt.xx.	...
		9.15	95	103.4			
		9.45	100	101.8			
		10.15	108	100.6			
		10.45	110	100.4			
	Oct. 9	2.30 P.M.	130	104.2	...	gtt.xx.	...
		3.15	112	102.8			
		3 45	115	101.8			
		4 15	112	100.2			
	Oct. 11	6.00 P.M.	108	103	...	gtt. x.	gtt.xx.
		6.45	112	104.6			
		7.15	108	104.4			
		8.00	108	104.6			
	Oct. 12	3 45 P.M.	120	103	...	gtt. x.	gtt.xx.
		4.15	118	101			
		5.00	124	99			
		6.00	110	97.8			

SPECIAL REPORT.

Patient.	Date.	Hour.	Pulse.	Temp	Resp	Guaiacol	Eucalyptol.
W. Edwards	Oct. 12	2.00	108	103	...	...	gtt.xx.
		2.30	102	101			
		3 00	118	102.8			
		4 00	108	103.2	...	...	gtt. xxv.
		5.00	110	103.2			
		5.30	110	103.2			
		8 15	120	103	7.15	...	gtt.xx.
		10.45	109	103		gtt. x.	gtt.xx.
		11.15	100	103			
	Oct. 13	12.00 P M.	100	100.8			
		1 00	110	98			
		6 00	132	96-4			
		9.30 A.M.	117	103-6	...	gtt.xx.	gtt.xx.
		10.05	120	103			
		10.45	112	102			
	Oct. 14	2.00 A.M.	120	103	...	gtt.xx.	gtt. x.
		3.00	118	101.4			
		3.45	108	101.4			
		4 00	116	102			
		6 00	110	102	..	gtt. x.	gtt.xx.
		6.30	100	101 2			
		7.00	104	101.8			
		7.30	108	101.2			
		5.30	108	103	...	gtt. x.	gtt.xx.
		8.00	108	102.8			
		9.45 P.M.	107	103.4	...	gtt. x.	gtt.xx.
		10 45	120	102			
	Oct. 15	4.00 A.M.	108	103.2	...	gtt.xx.	...
		5.15	108	103.2			
		5.45	108	103			
		6.15	102	100.8			
		6.45	102	98.8			
		8.00	98	97.2			
	Oct. 16	3.00 P.M.	117	103	...	applied	
		4.00	116	100			
		5.00	108	98			
		3.45 A.M.	102	103	...	gtt.xx.	...
		4.23	120	101.8			
		6 00	120	99.6			
		8.00	124	99			

FURUNCULOSIS OF THE EXTERNAL AUDITORY CANAL.

BY S. MACCUEN SMITH, M.D.,
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ATTACKS of circumscribed inflammation in the external auditory canal, known as boils or furuncles, are of such frequent occurrence, and cause the sufferer so much pain and inconvenience, that the necessity for a more extended recognition of their existence, and especially a knowledge of the efficient means we have for their relief, has induced me to submit a few practical hints upon their treatment.

Notwithstanding the fact that furuncle of the external meatus is one of the most common ear-affections that the physician is called upon to treat, the condition is, nevertheless, often difficult to recognize and troublesome to combat successfully. Here, as elsewhere, the furunculous inflammation is limited to a small area, and has a strong tendency to the formation of pus, owing probably to the fact that the canal is abundantly supplied with excretory glands, and when inflammation is once inaugurated it usually runs an uninterrupted course to the stage of suppuration.

Inflammatory diseases of the auditory meatus are plainly and properly classified as being either acute or chronic, circumscribed or diffuse. They may involve simply the integument, or may extend more deeply into the subcutaneous structures, and implicate both the periosteum and bone.

The lining membrane of the external auditory canal is a continuation of the integument covering the auricle, being, however, considerably modified as it reaches the osseous meatus. As the membrana tympani is approached, this same integument undergoes still greater changes, and forms the outer layer of the drum-head. Notwithstanding the striking alterations observed in the appearance of the skin of the auricle and of the auditory canal, as in contrast to that noteworthy modification each undergoes to constitute the outer layer of the membrana tympani, yet neither the drum-head nor the skin of the auditory meatus can be spoken of or treated as a mucous membrane, any more than it would be proper to consider the integument of the auricle as such. Mention of this is made at this time for the reason that some writers have described certain affections of the canal under the head of "catarrhal inflammation;" but, as the word *catarrhal* can only be applied or used in connection with the diseased condition of a *mucous membrane*, it is quite impossible for the external auditory canal to be the seat of such an inflammatory process, inasmuch as the canal is covered with *integument* and not with *mucous membrane*.

It has already been definitely established that the great majority of pathologic conditions are traceable to the destructive action of disease-germs, and that pus-formation does not occur without the presence of pyogenic microörganisms. The researches and subsequent claims of Löwenberg likewise demonstrate that these microörganisms play an important part in the etiology of furunculosis of the auditory meatus. If then the disease in question is the result of a specific germ-poison, it is reasonable to assume that our failure to treat successfully some of these cases within a reasonable time is due to the fact that the remedies employed for their relief are but feebly germicidal, and, therefore, insufficient to destroy the infecting bacterium.

Those actively engaged in this line of work in a large dispensary and hospital service must at times have been impressed with the thought that boils of the external auditory canal occur epidemically. Usually, of course, these cases are sporadic; but at certain periods of the year (notably in the spring and fall) they are seen in large numbers, and come so often from a particular locality, that we are inclined to believe them not only epidemic, but also infectious and contagious. During the fall of 1890 I saw 117 cases of boils of the meatus, sixty-two of which came from a locality embraced within an area of about one square mile. Forty-six of this number were males and sixteen females. Fifty-one were suffering at the same time from an acute attack of influenza, but without severe constitutional disturbances; while eleven showed no apparent illness whatever. As to the situation of the boils, fifty-two were in the cartilaginous meatus, four in the deep osseous portion, and six at the extreme outer end of the canal.

When the direct cause of an aural furuncle is obscure it has been customary to attribute it to an impairment of the general health, which in many cases is quite evident and conclusive. However, it is interesting to note the large percentage of apparently healthy people we find suffering from boils of the external meatus; furthermore, in these otherwise hardy patients, it is the exception to find any that have been troubled with boils on other parts of their person. Löwenberg, who was the first to point out the parasitic nature of aural boils, has definitely proved that furunculosis can be artificially produced by rubbing sound skin with staphylococci. We have in this demonstration, therefore, a plausible explanation of the cause of aural furuncle in persons who are otherwise enjoying good health, especially when the origin cannot be traced to a chronic suppurative otitis media, the introduction of bacteria into the canal through the use of dirty plugs of cotton-wool, or to direct mechanic or chemic irritation. The initial etiologic element, is, therefore, shown to be infection by the direct entrance of a staphylococcus beneath the skin, through an abrasion or by way of a hair-follicle or ceruminous gland.

In the same manner we have reason to believe that the public phonograph is liable to become a source of aural infection of no small proportions, as it has become quite common for a community to use the phonograph placed in a conspicuous place for their amusement. The hard-rubber ear-pieces are seldom cleansed, and, being passed from one individual to another, it can readily be seen how either the public phonograph, or other similar instruments, may be the means of conveying infectious material from diseased to healthy ears.

TREATMENT.—Many physicians have doubtless been annoyed with the stubborn resistance of aural boils and their failure to yield to the various therapeutic agents employed for their relief; moreover, the repeated recurrence of this affection has been embarrassing to the physician and vexatious to the suffering patient. Many lines of treatment, both local and general, have been suggested for their relief; but unless such therapeutic measures have as an object the destruction of disease-germs they must in a measure continue to be unreliable and disappointing. The auditory canal, and in fact the entire ear, presents many obstacles to the attainment of strict asepsis in the treatment of its various diseases. Were it possible to overcome these difficulties entirely we could then expect these obstinate affections of the ear to be as amenable to treatment as when located in other organs. Much progress, however, has recently been made in the employment of antisepsis in this locality, and we are now enabled under proper precautions to operate with almost immunity on parts of the ear that heretofore would have been regarded as most hazardous.

In this, as well as in other similar ailments, the important object of treatment is the immediate relief of suffering, together with the limitation, modification, or abortion of the inflammatory process. Our ability to accomplish one or more of these purposes will largely depend on the stage the disease has reached before treatment is begun, as well as the efficiency of the remedies employed for its relief.

The treatment generally accepted for furuncle is very simple, and consists in an incision through the boil, dividing the periosteum down to the bone. This procedure, however, is usually more applicable to boils that are well advanced. Our treatment will serve a much better purpose if the case is diagnosticated at an early period, when an attempt can be made to abort the incipient boil. We know that many inflammatory processes might be aborted or limited in their destructive action if they could be subjected to local antiseptics that were not only powerful germicides, but at the same time non-poisonous and non-irritant. In the compound known as camphor-phenol, which is composed of fifty-five per cent. of camphor and forty-five per cent. of carbolic acid, we have a preparation that meets the requirements, and hence becomes at once a valuable addition to our local therapeutics. In compounding this preparation we must insist that the drugs be chemically pure; otherwise the crude elements of the carbolic acid, or the impurities present, will be markedly irritating. It has been my custom to employ this combination in its full strength.

The use of this preparation, when applied locally for the alleviation or cure of furunculosis of the external auditory meatus, is founded upon its inhibitory action on the development of the staphylococcus pyogenes aureus, and incidentally on its marked anesthetic properties. Granting this hypothesis to be correct, it is only proper to expect that this solution of camphor and carbolic acid will not only shorten the disease in question if seen early, but should also lessen the suffering and limit the course of a case well advanced.

From a practical knowledge obtained by an experience of more than eight years in the employment of this preparation I feel justified in offering the claims stated as reasonably correct. Many cases of incipient furunculosis can be successfully aborted by introducing a cotton tampon saturated with carbolized camphor into the meatus. Even when the furuncle has so far advanced that an incision becomes necessary, the pain incident thereto can be greatly lessened by previously introducing a similar tampon, a few minutes only being required for more or less complete anesthesia to take place. Likewise, after the boil has been opened, the pain will be almost immediately relieved by the introduction of a piece of cotton-wool saturated with this solution. In the latter case, however, the tampon should be large enough to fill the circumference of the meatus, and extend well beyond the boil, as the pressure exerted by the cotton assists in promoting rapid absorption, and thereby facilitates quick recovery. Before each tampon is introduced, the canal should be carefully mopped out with alcohol, as this is our most efficient means of clearing the meatus of all débris, and the alcohol, moreover, is an excellent antiseptic. It may be necessary to apply a fresh tampon of camphor-phenol every day until five or six have been introduced, but two or three are usually quite sufficient to destroy all disease-germs. An ointment of yellow mercurous oxid (gr. ½ to ʒj) can be substituted for the camphorated phenol as soon as the inflammation begins to show marked signs of subsiding.

In advocating this line of treatment it should not be understood that by so doing we would exclude other therapeutic measures of more or less value. In selected cases blood-letting or blistering in front of the tragus is of undoubted service, and hot antiseptic irrigation of the meatus should be employed when indicated. I should like also to mention the value of dry cold in the treatment of inflammatory conditions of the external and middle ear. This, however, will be treated of more at length in a future communication. The use of poultices is mentioned here only for the purpose of discouraging their use. The single benefit that could arise from the employment of hot poultices is the questionable good that may result by promoting suppuration. In so doing, however, one creates a populous hot-bed for the rapid multiplication of bacteria, and frequently excites an inflammation of the auricle. Moreover, the few cases of middle-ear disease that I have seen occur as an extension from the inflamed meatus have invariably resulted after frequent poulticing had been practised.

In debilitated subjects the general health should receive due consideration. The administration of selected tonics, and those drugs known as alteratives, in conjunction with proper hygienic surroundings, will do much to effect the cure of an existing boil, and especially to prevent its recurrence. For this purpose I would strongly urge the use of arsenic in the form of Fowler's solution, given in increasing doses until the physiologic effects are produced. The administration of calcium sulphid, although popular for a time, has on the whole been disappointing in my experience.

In conclusion, I may state my belief that aural furuncle is both infectious and contagious, with a tendency to recurrence from auto-inoculation, and that it occasionally manifests itself epidemically. I can only add that I do not recall a single instance in which there was a recurrence of the furuncle in any portion of the canal, providing strict antisepsis was maintained, and all these important therapeutic measures were applied to the case.

To summarize briefly the treatment of furunculosis of the external auditory canal:

1. As antiphlogistic measures, use the leech or blister in front of the tragus, and hot antiseptic irrigation, when indicated. Avoid the use of poultices.

2. As local applications, cleanse the canal with alcohol and insert an ample tampon of cotton-wool saturated with camphor-phenol, renewing this every twenty-four hours, or oftener if required. This is at once antiseptic and analgesic.

3. As constitutional remedies, give tonics and alteratives, with the especial recommendation of arsenic in the form of Fowler's solution. This should be administered in increasing doses until its physiologic action is obtained.

4. As an operative procedure, make a free incision through the boil, and divide the periosteum down to the bone. This will prove necessary in well-advanced and chronic cases, especially when pus has already formed.

1502 WALNUT STREET.

CLINICAL MEMORANDA.

SIX CASES OF DIPHTHERIA TREATED WITH THE ANTITOXIN.

BY EDWARD P. BREWER, M.D., PH.D.
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CASE I.—The patient was a girl, seven years of age. Her brother had just died of diphtheria after an illness of three days. She was stricken suddenly and violently. Twelve hours from the onset the pulse was 120, respiration 30, and the temperature 103.3°. The tonsils were partly covered with a thick, yellow membrane; there was a patch on the pharynx, and the nostrils were so invaded that nasal respiration was impossible. The voice was hoarse and husky; a short, croupy cough occurred at short intervals. The glands in the neck were swollen and tender. Under these conditions two cubic centimeters of Aronson's diphtheria-antitoxin were injected. Twelve hours later, the temperature became normal, the respiration 18, and the cough less frequent and softer in tone. The pulse-rate continued 120 per minute. Thirty-six hours after the injection the nasal membrane was exfoliating in great masses; the tonsils were nearly clean, and the pharyngeal membrane had disappeared. The voice was less hoarse, and the cough practically subdued. At the expiration of five days every vestige of the disease had disappeared. The pulse continued rapid for several days. No other medicine was used, not even a gargle.

CASE II.—A boy, aged two years, a brother of Case I, was exposed to the disease, and was inoculated with one-half cubic centimeter of Aronson's antitoxin. The following night the boy developed membrane upon both tonsils. The thermometer registered 102°, and the pulse and respiration were proportionately increased. One-and-one-half cubic centimeters of Aronson's antitoxin were now given. In twelve hours the temperature and respiration became normal. In twenty-four hours the membrane began to exfoliate. On the third day the tonsils were clean. The pulse-rate was gradually reduced, and returned to normal on the fifth day.

CASE III.—A brother of the cases cited, aged four years, was injected with one cubic centimeter of Aronson's antitoxin. Six days later he developed diphtheria. The tonsils were well covered with a thick and yellow-colored membrane which resembled chamois-skin. The temperature was 101.5°, respiration 24, pulse 120. Having exhausted my supply of antitoxin, mercuric chlorid was given in doses of one-hundredth of a grain every two hours. The following day the temperature was 102.5°, respiration 24, pulse 125. The membrane had extended to the pharynx. The lymphatic glands in the neck became greatly infiltrated. During the next twenty-four hours the condition became more grave, the lymphatic swelling increased, the thermometer registered 103.5°, the respiration 32, and the pulse 140. The tonsils and pharynx were entirely covered with membrane and the uvula and soft palate were involved. At this juncture, I obtained a supply of Roux's antitoxin, made by the Pasteur Institute of New York. Twenty-five c.c. were injected into the back of the patient. The bichlorid was continued. Twelve hours later the temperature was 101°, respiration 25, pulse 140. Twenty-five c.c. of the Roux antitoxin were again injected. After an interval of ten hours I again visited the patient. The temperature was now 100°, respiration 20, pulse 130. Forty-eight hours after the first injection the quantity of membrane was perceptibly diminished. The progress of the case was satisfactory, but much slower than that of the others, five days elapsing before the throat was free from membrane. The bichlorid was continued until the membrane disappeared; then a chalybeate tonic was ordered.

CASE IV.—I was called on December 11th to see a lady aged about thirty, suffering from a sore-throat. The tonsils were partly covered with a light-gray membrane, the glands of the neck were somewhat enlarged and tender, and the temperature was 101°. The head ached violently, the neck was stiff, and the prostration was sufficiently intense to confine the patient to bed. While the case bore the general characteristics of diphtheria, I deemed it best to defer the use of the antitoxin until the diagnosis should be more certain. I therefore ordered five grains of sodium sulphite every two hours, and that the tonsils be brushed every two hours with a compound of carbolic acid, five parts, Monsel's styptic, thirty parts, glycerin, sixty-five parts. On December 12th the quantity of membrane was increased, and the glandular swelling in the neck greater. I now injected fifteen c.c. of Roux's antitoxin and discontinued the other medicine. On December 13th the membrane on the left tonsil had diminished, but it had increased on the right. Ten c.c. of Roux's antitoxin were injected. A gargle of one part of Labarraque's solution to twenty of water was used hourly. On December 14th the membrane had disappeared from the left tonsil and was reduced in amount on the right. On December 15th the membrane had disappeared from the throat. The gargle was continued for three days. A simple tonic was then ordered.

CASE V.—A young lady of twenty years developed a slight soreness of the throat, accompanied by chills, fever, and infiltration of the lymphatic glands of the neck. On the following day a light-yellow membrane appeared on the left tonsil. By night the left tonsil was nearly covered, and the right tonsil and pharynx showing a small patch of membrane. The temperature was 102°, pulse 110, respiration 22. Twenty-five c.c. of Roux's antitoxin were injected into the lumbar region. A weak boric-acid gargle was ordered. The next morning the temperature and respiration were normal, the pulse numbering 100. In forty-eight hours the membrane was mostly exfoliated. In seventy-two hours from the time of injection the membrane had entirely disappeared. Recovery was rapid and complete.

CASE VI.—A child, four years of age, had been ailing for several days, but was able to be about. The mother noticed swollen glands in the neck and some membrane in the throat. I was now called, and found the temperature 101°, the pulse 130, respiration 19. Both tonsils showed a patch of membrane about one-half inch in diameter. I advised the use of the antitoxin, but the parents objected. So the mercuric chlorid was given in doses of $\frac{1}{100}$ grain every three hours. This treatment, with various local applications, was continued for seven days. The membrane decreased, but did not disappear. On the seventh day of this treatment the child had a chill, the membrane increased, and the voice became hoarse. The temperature was 102°, pulse 140, respiration 24. I now insisted upon the use of antitoxin. Assent being given, I injected 25 c.c. of the Roux antitoxin, and discontinued all other medicines. The temperature rapidly returned to the normal; the pulse and respiration being but little affected. In twenty-four hours the membrane was reduced in amount, but did not disappear until the fourth day following the injection.

REMARKS.—A common hypodermic syringe was used. Great care was exercised in sterilizing it, particular attention being given to the packing on the piston. The skin at the point of injection was washed with a 5 per cent. solution of carbolic acid. The bottle containing the antitoxin, and also the hands of the operator, were sterilized. When the Roux preparation was used the syringe was filled, the needle inserted and the barrel emptied. The barrel was then carefully detached, leaving the needle *in situ*. The barrel was then refilled and emptied until the required amount was injected. In using the Roux serum a syringe of large capacity is needed, for although the plan described is not especially painful, it is a somewhat awkward process with young and frightened children. Massage was not used to diffuse the antitoxin, and, excepting a slight edema, no local reaction was observed. The place of injection is unimportant. Probably the back is preferable, because it is the least painful.

The quantity of serum injected must vary with the preparation employed. The Aronson serum, which has been largely used in England, is the strongest and most easily used. The first injection is generally 5 c.c., and followed by from ½ to 1 c.c. twice daily, as the case shall demand. The Behring serum is supplied in three strengths—No. 1, containing 600 antitoxin-normals; No. 2, containing 1000 antitoxin-normals; and No. 3, containing 1500 antitoxin, normals. According to Behring and Ehrlich, an antitoxin-normal possesses the power of neutralizing ten times its quantity of diphtheric toxin. Serum No. 1 is used only in children under ten years of age, and the whole quantity is given at a dose, and repeated on the following day. Serum No. 3 is two-and-one-half times stronger, and should be employed in patients over ten years of age. Each package contains a single dose.

The Roux serum seems destined to become the popular preparation. It is dispensed in bottles containing 25 c.c.

According to M. Lesage, the following are the best rules for the use of antitoxin: Twenty-five c.c. should be injected as soon as the diagnosis is established. Twenty-four hours after the injection the fever diminishes or disappears, the pulse returns to normal, the general condition improves, and the albuminuria decreases or disappears. One injection may suffice for a cure. If, however, after a period of amelioration the symptoms of infection reappear, a second injection of 25 c.c. must be given at once. If, after twenty-four hours, the condition is stationary, a second injection must be employed. If, after a second period of twenty-four hours, there is still no amelioration, a third injection of 25 c.c. should be given. If the three injections avail nothing, the prognosis is grave, and a fatal issue may be feared.

The dose required for immunization is not definitely determined. While Katz and others have reported a large number of instances in which preventive inoculation was practised, with failure in only 10 per cent. of the cases, it is not proved that these children were really infected. Prof. Bokai believes that the disease may be only held in abeyance, and develops after five or ten weeks. In Case III diphtheria became manifest six days after an immunizing dose of Aronson's serum, and in Case II on the following day. In suspected cases of diphtheria, when there has been exposure to infection, from 5 to 10 c.c. of the Roux antitoxin may be given, and repeated in seven or eight days.

The pulse was not noticeably affected by the antitoxin. In no instance was its frequency reduced, as might have been expected from the mere fall in temperature. The volume in every case was reduced, but this may have resulted from the defervescence.

Carbolic acid and mercuric chlorid are thought to inhibit the action of the antitoxin. Cases III and VI appear to sustain this assertion. Both were given substantial quantities of the sublimate, and were the most tardy in manifesting the good result. While the temperature was promptly reduced, and the general condition improved, the membrane was slowly desquamated, and betrayed a tendency to reappear in small patches in new positions. In Case IV and Case V a gargle of Labarraque's solution (1 : 30) was used hourly during the waking hours. The result was not seemingly affected by it.

No bacteriologic examination was made, nor is it possible in a large percentage of the cases encountered by the general physician outside of the limits of populous cities. While diphtheric membrane may arise from the action of micrococci, staphylococci, and streptococci, and may emphasize the activity and virulence of the Loeffler bacillus, it has been fairly established that the diphtheria-antitoxin is innocuous to all but the Loeffler bacillus, and antidotal alone to its toxin; therefore if the membrane and the systemic disturbance are due to the diphtheria-bacillus, the reaction after the use of the antitoxin is so pronounced in the early stage that there is practically no doubt of the nature of the case, while with the fully-developed case there can be little doubt, and surely no time to be wasted in bacteriologic examination. Scientific accuracy is most satisfactory and interesting, but when weighed against the welfare of the patient it is secondary to the practical test.

INTESTINAL ANASTOMOSIS SUCCESSFULLY PERFORMED AFTER THE LOSS OF THIRTY INCHES OF BOWEL.

By JACOB R. JOHNS, M.D.,
OF DENVER, PA.

THE limitation of the work of the general physician' what should be undertaken and what left to the specialist, is a subject of vital importance. In a special sense is this true with the rural physician, remote from any considerable center of population. To him conditions arise in the night manifestly demanding the immediate attention of both physician and surgeon. Generally neither the patient nor his family is competent to appreciate either the gravity or the indications of the case. Probably an early and strictly aseptic operation alone promises favorable results, while both are practically impossible.

The physician may be strongly tempted to play that comely rôle of the fool, to "rush in where angels fear to tread." If he be a novice, he may be puzzled with the great question of Hamlet, "To be or not to be"—whether to be himself the surgeon or step aside to make place for another.

The case herein detailed was surrounded by many perplexing questions requiring speedy solution.

J. S., of Reamstown, Pa., forty-one years of age, height six feet, weight 150 pounds, a plasterer by trade, of sound constitution and muscular physique, was seized June 15, 1894, with cholera morbus of a severe type in the early morning. He had right-sided scrotal hernia, for which a well-fitting truss had been worn for eight years. On the morning in question, in the agony that followed vomiting and purging, he left his bed, failing to reapply the truss. The bowel descended and became strangulated. Dr. U. B. Kline, senior physician of the place and a man of nearly forty years' experience, was called in consultation. Antispasmodic and relaxing agents were employed internally and externally without results. We decided to operate.

With great difficulty the patient was etherized, yet not perfectly at any time. However, the hernial sac was laid bare and the constriction divided. Upon this the gas escaped and the tumor became much smaller, but the intestine obstinately refused to be replaced. The condition was diagnosticated as twisting of the bowel within the sac, rendering the hernia irreducible.

A surgeon was dispatched for in the person of Dr. Daniel B. D. Beaver, of Reading, Pa., fifteen miles away. Night intervened, during which gas refilled the hernia, and marked swelling resulted. Upon opening the sac eighteen hours later, June 16th, when the surgeon had arrived, an ounce or more of dark fetid liquid flowed out and about two feet of small intestine, black and lifeless, came into view. With this unclean condition of the sac and its contents it seemed best to postpone the reparative operation, and for the time establish a fecal fistula. Accordingly the inguinal ring was further enlarged and the intestines sutured to the abdominal walls.

An effort was made to restore the circulation; but the die was cast: the bowel was dead. Constriction by torsion, augmented by pressure of gas from within, caused complete obstruction of the blood and feces, and yielded dire results in an incredibly short space of time.

While the lines of demarcation were forming, the dressing consisted of cloths wrung out of hot solutions of corrosive sublimate, 1 : 4000, retained by a flannel diaper. This was renewed from every two to four hours. On the second day the bowel was punctured to liberate the fluid and gas. On the third day the bowel was stripped, and in the second week two feet of dead bowel were excised.

The condition of the patient during the first week was most critical. For five days the ingesta consisted almost entirely of cold water. Constant nausea and hiccough persisted for several days. The temperature, however, never rose above 100.4°, and after the fifth day was constantly normal.

For the psychic effect and to irrigate the colon, three rectal injections were given. But the small intestine was most profoundly inactive. The cholera morbus, as also the graver circumstances that followed, had left its morbid imprint here. On the fourth day, when vigorous treatment was imperative, the foot of the bed was again lowered and calomel and sodium bicarbonate, āā gr. ss, were administered every hour till decided effects were produced. Thus fecal movement by the artificial anus became established, nausea and hiccough disappeared, and appetite returned.

Near the close of the second week there was constant escape of feces, acid in reaction, and containing much undigested food. To control this, fluids were restricted and four grains of opium given daily. The fecal movements then became three in number daily. The dry diet was continued, while the opium was gradually reduced and omitted.

The incision into the scrotum healed by second intention. The danger from secondary infection was reduced to a minimum by keeping the wound constantly covered with iodoform, 1, powdered boric acid, 4. Over this was placed surgeon's cotton charged with carbolized cosmolin. Quilting cotton was largely used to catch the fecal discharges. This was so disposed as to direct the feces toward the left groin. The dressing was renewed twice daily. In the third week, when all dead tissue had been removed, it was found that the line of dermarcation in the distal end had formed beyond the retaining stitches, thus allowing the end to escape into the abdomen. The alarm occasioned by this was but transient. The inguinal ring immediately over this retracted end showed no disposition to close. The secretions—mucus, slough, pus, etc.—appeared on the outside, even in the fourth week.

Convalescence was rapid in the fourth week. The patient sat in a chair an hour daily and freely discussed the operation for resection.

On July 13th Dr. Beaver, accompanied by an assistant, Dr. Daniel Longaker, again came upon the scene. At this time, as has been noted, the distal end of the bowel had been retracted out of sight and beyond reach. The proximal end had become invaginated and protruded in treble thickness, mucous surface external, three inches, in spite of the pressure that had been on the fistula since the primary operation.

The operation for intestinal resection was strictly aseptic, and demonstrative of the fact that this is possible even in the humblest rural home. On the preceding day the patient's bed-room was rendered as clean and sweet as any hospital ward, and the patient thoroughly scrubbed. Perfectly uniform anesthesia was obtained by supplementing ether with chloroform in small quantities, as needed. End-to-end anastomosis was made by means of a Murphy's button seven-eighths of an inch in diameter.

The first step of the operation was to open the abdomen in the linea semilunaris. The incision extended from a point three inches above the external inguinal ring down to the knuckle of gut that protruded from it. The adhesions between this knuckle and the ring were so extensive, and the tissue so vascular, that it was thought better to ligate the bowel internally than to detach it from the outside. Accordingly, a ligature was put around it close to the inner surface of the abdominal wall. Clamps were then put on both ends of the bowel half an inch above the ligature, and the bowel and involved mesentery severed between them and the ligature. Several large mesenteric vessels were now ligated, and the mesentery trimmed back an inch from each end of the bowel. The puckering strings were put into the ends of the bowel, and the button inserted in the manner described by Dr. Murphy. Then, after approximating the cut edges of the mesentery by means of a few fine silk ligatures, the bowel was dropped into the abdomen and covered with a warm, wet sponge. The stump of gut in the inguinal ring was now turned out by tearing the adhesions between it and the abdominal wall. This was followed by rather free bleeding, which ceased, however, while the sutures were being put into the upper part of the wound. The whole incision, including the inguinal ring, was closed by a single set of silkworm-gut sutures. The lower end of the wound, from which the attached gut was torn, healed by second intention, forming a thick, firm cicatrix, and will, as indicated by present appearances, be the last part to give way before pressure of the contents of the abdomen.

Dr. Murphy's button is a very ingenious contrivance, and one that marks a step in the advance of bowel-surgery. The insertion of the button is decidedly the simplest part of the operation for intestinal anastomosis. It may be accomplished with ease and rapidity, and secures perfect approximation of the peritoneal surface of the ends of the bowel, while it avoids completely all communication between the lumen of the bowel and peritoneal cavity—the dangerous feature of all methods in which approximation is secured by means of sutures.

Although the application of this button is simplicity itself, there should be borne in mind certain common physical facts in its use. In cases of fecal fistula involving the small intestines, the distal, unused portion of the bowel always contracts with time. In this case it had contracted to less than three-quarters the caliber of the proximate portion in four weeks. The upper portion of the bowel having been of large size, the largest button, which seemed small for it, was taken, and one section inserted. When the counterpart was applied to the distal end it could be inserted only with much difficulty, and with dilatation of the gut. In fact, it stretched the gut so, that in a few minutes it became pale from obstruction of the blood-circulation. This appearance of the bowel led to fear of impaction of the button and sloughing of the tissues around it. It was, therefore, extracted and the next smaller size inserted with ease. With this the bowel maintained its normal color. It is probable that this was as large a size as could be used with safety, and it is also quite likely that, as it remained with the patient seventeen days, it had to dilate the bowel on its way down. In such cases the proper plan is undoubtedly to put the button into the distal end first, and use the largest size this will admit without undue stretching and interference with the capillary circulation.

Excepting a little nausea, a slight pain felt in the right inguinal region only on deep inspiration the first and second day, a feeling of fulness the first night, and less than two degrees of surgical fever, there were no discomforts. Gas passed downward at once.

A stool of bloody secretions mixed with feces was had twelve hours after the operation. After the eighth day there was daily fecal movement: at first four or five times daily, but gradually less often. On the tenth day the first evidences of detaching slough appeared in the stools. The button, however, did not pass till the seventeenth day, when, for the first time, the chamber was used instead of the bed-pan. The patient was apprised of its appearance only by seeing it in the chamber

Milk in the form of ice-cream, made rich by the addition of eggs, eaten slowly, was the main article of diet the first week.

Though the total loss of intestines was thirty inches from the jejunum, I judge, convalescence was uninterrupted, rapid, and perfect. Two weeks were spent in bed, and two more about the house, making in all, from the attack of cholera morbus, eight weeks.

A supporter for the abdomen was improvised by replacing the pad of the patient's adjustable ratchet-clutch truss, by a concave, kidney-shaped board, 4 x 7 inches. Instructions were given to wear this one year.

The operation has proved a radical cure of the hernia.

To show that the loss of thirty inches of small intestine in an adult is not incompatible with perfect bodily nutrition I append the following:

The gain in flesh after the final operation, and before the patient left the house, was considerable. In the fifth week, when he was weighed, twenty-two pounds of his original weight were still lacking. The first week after weighing, with daily outdoor exercise, he gained six pounds; the second week, four pounds; the third week, three pounds; the fourth week, two pounds; and at the date of writing, the thirteenth week after the first operation, he has reclaimed the last pound, and feels that he is again quite himself in every particular.

A UNIQUE CASE OF INTESTINAL FISTULA FOLLOWING CELIOTOMY.

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A. T., twenty-eight years of age, a widow, was referred to me in June last by Dr. Shrum, of Bedford, Ind. She gave a history of dysmenorrhea of most decided character, dating back five years, at which time she had had a child, the only one she has ever had, and the birth of which was followed by puerperal fever. At each menstrual period she was confined to bed for quite a number of days, both before and after the flow. She had been absolutely incapacitated for work of any kind, and had been bedridden a greater part of the time.

Digital examination revealed exquisite tenderness on both sides, and the presence of a great deal of infiltration in both broad ligaments, with what was taken to be double pyosalpinx. An operation was, of course, advised, and carried out on June 23, 1894. Very dense adhesions were found upon both sides, those on the right being the denser, this tube being imbedded in a perfect mass of adhesions composed of the intestines, uterus, bladder, etc. After some very difficult work the tube was finally enucleated, as was also the left tube, this, however, more easily than the right. A drainage-tube was introduced, and the abdomen closed and dressed in the usual manner. Through the tube a strip of gauze was carried back and inward on the right side, upon which side the adhesions had been so dense and numerous; on this side on account of the great amount of infiltration and the thickening of the ligament—it being fully three-quarters of an inch in thickness—very heavy ligatures were applied to the broad ligament. The gauze was removed after twenty-four hours, and, although there was not much fluid upon aspiration, the tube was left in longer for fear of hemorrhage, being removed on the morning of the third day.

The patient did unusually well, without any elevation of temperature, the bowels moving in due time, until the sixth day, at which time the patient developed some tenderness along the point of the incision; the dressings were removed, but nothing unusual found. At the end of a couple of days more she was still complaining, and the dressings were again removed and the stitches taken out. Provisional sutures had been put in at the point of drainage, and when these were removed there was a gush of slightly sanguineous fluid, very thin in consistency, with, however, no indication of pus. This left a fistulous tract. The fistula was treated with hydrogen dioxid and packing, and closed in a couple of weeks. The woman had also a great deal of vesical tenesmus, followed by a violent cystitis, which kept her in bed for a week longer. The temperature in the meantime had subsided to normal, and there was absolutely no indication of there being anything amiss. About the sixth week she became obstinately constipated, resisting salines, calomel, and enemata of water and of water and glycerin, etc. This constipation continued for five days. The woman was then again put upon two-dram doses of Rochelle salts, repeated every hour, and these were continued until she had taken about four ounces. All at once there occurred one morning a gush of fluid mixed with a little fecal matter from what had previouly been the sinus. A short while afterward the bowels moved, the action being very copious and repeated a number of times. Examination then showed that a fecal fistula had established itself at the point of drainage. This fistula was treated by local applications, tonics were ordered, and the bowels were kept open. In about ten days the fistula had closed absolutely, there never having been, however, any escape of fecal matter since the first discharge mentioned, but the patient had continued at times to pass a little gas through the opening.

The woman was now sent back home, directions being given her physician to watch her from time to time. Later it was learned by letter that the fistula had again reopened, and that gas was occasionally passing, and also that she passed several lumbricoides through the fistulous tract. The fistula remaining open, she was again sent to me for operation, but my clinic not being in session she was referred by me to the clinic at the Louisville Medical College, where she came under the care of Dr. A. M. Cartledge, who dissected out the fistulous tract, and closed the opening in the bowel in a most beautiful manner, the patient making a perfect recovery.

A letter which I have recently received from Dr. Shrum (and another from Dr. Stipp, who had the patient under observation after I sent her home) states that she has never passed any fecal matter through the fistula since coming under his observation. The patient herself says that she has passed in all seven lumbricoides through the fistula; that upon two occasions others have come to the external opening, partly protruding so that she has been able to see them, and then go back. She has had absolutely no pain except just previous to passing a lumbricoid, when she would have a great deal of pain, and she says that she always knew when one was coming.

The operation revealed, as had been suspected, that the fistulous tract was in the track of the drainage, and that at the bottom there was the ligature that had been applied to the broad ligament, and had no doubt become infected through the drainage-tube. At this point a knuckle of gut was adherent, forming almost a complete loop, the fistula itself being drawn up by the intestines and seeming bent upon itself.

I report this case on account, first, of the fact that seven weeks elapsed from the time of the first operation until the establishment of the fecal fistula, which, however, is possible, as Senn has shown us, when the cause of these fistulæ is an infected ligature. Another reason is the passage of the lumbricoides, which, in itself, is a very unique feature, and something that I have not seen mentioned in literature, though I have searched for it very diligently.

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MEDICAL PROGRESS.

A Tumor of the Lumbar Region of the Spinal Cord.—At a recent meeting of the New York Neurological Society Van Gieson and Fisher reported the case of a carpenter, sixty-one years old, with a negative family history, but a personal history of syphilis at the age of twenty-five, who for about six months before coming under observation suffered from pronounced dizziness on standing erect. His memory was good. There was diplopia of three years' duration. Hearing was good; speech was normal; there were no gastric symptoms. For eight months there had been retention of urine and frequent and severe attacks of diarrhea. There was an entire loss of sexual desire. There was no weakness or ataxia of the upper extremities, but progressive loss of power in the lower extremities, of about one year's standing. There had never been any twitching or convulsions, and no hyperesthesia. There was a feeling of numbness from the waist down. The mental condition was unimpaired. The pupils reacted both to light and in accommodation; the visual fields were normal. There was no paralysis of any of the cranial nerves. Coördination in the lower extremities was impaired, the patient being unable to stand erect, and falling to the floor unless supported. The condition of the muscles was unchanged. The gait was markedly ataxic, and the patient was unable to walk at all without assistance. There was a gradual loss of sensation to touch and pain in both feet, more pronounced on the right side. The knee-jerk on the right side was entirely abolished; on the left side it was normal. Finally, a large bed-sore developed over the sacrum, and death soon followed.

The post-mortem examination disclosed an extramedullary tumor of the spinal cord, cylindrical in appearance, and measuring a little more than an inch at its broadest part, and extending from a little above the second lumbar segment downward into the cauda equina a distance of nearly three inches. It rested on the ventral surface of the cord and at about the level of the fourth lumbar segment. By pressure it had begun to produce some distortion of the cord. At the fifth lumbar segment this distortion was very striking, both the anterior and posterior horns being compressed into a thin mass. In the sacral region the pressure-effects were less marked. The extreme tip of the cord was found to be curled upward on itself as far as the fifth sacral segment. Whether this retroflexion was caused by the growth, which perhaps enlarged from below upward, could not be determined. The neoplasm proved to be a glio-sarcoma.

The Amounts of Calcium, Magnesium, and Phosphoric Acid in the Urine and Feces in Osteomalacia.—As the outcome of a quantitative investigation, Neumann (*Archiv für Gynäkologie*, Band xlvii, Heft 2, p. 220) has arrived at the following conclusions:

The secretion of lime by the kidneys in the progressive stage of osteomalacia scarcely differs from the normal. In the stage of regeneration of bone, as compared with the progressive stage, and thus as compared with the normal, smaller amounts of lime are excreted with the urine, so that a greater retention than occurs in the first stage would be assumed if one were to judge from the constitution of the urine alone. If, however, the total amount excreted both in the urine and in the feces is made the basis of calculation, it appears that the retention is really less in the second stage than in the first. During the progressive stage the organism suffers a small loss in magnesium. In the stage of bone-regeneration, however, small amounts of magnesium are retained. In osteomalacia the normal relation of 1 : 3 of lime to magnesium is changed in favor of the former. In the first stage there is a pronounced excretion of phosphoric acid, so that the entire organism, and more particularly the bones, suffers the loss of large amounts of phosphoric acid. In the regenerative stage of the disease comparatively large amounts of phosphoric acid are retained in the organism; the quantity corresponds approximately with the loss of phosphoric acid during the first stage. Therapeutically these observations confirm the wisdom of administering phosphoric acid in conjunction with improvement of the hygienic and nutritive conditions.

Persistence of the Foramen Ovale in a Boy of Eight Years, with Clubbed Fingers.—Stembo (*St. Petersburger medicinische Wochenschrift*, 1894, No. 41, p. 366) has reported the case of a boy, eight years old, who presented no special peculiarity until he reached the age of five-and-a-half years. At the age of three he had a severe attack of scarlatina, complicated by nephritis. At this time slight cyanosis was observed. Shortly afterward, following emotional disturbance, the child became short of breath and markedly cyanotic. Subsequently, he had an attack of typhoid fever, then one of pneumonia, and some time later one of smallpox. He came under observation on account of an attack of parotiditis. Attacks of bronchitis recurred, and frequently from time to time hemoptysis, and the stools also contained blood. The child was defective in development, and presented marked cyanosis. The veins of the neck pulsated, the chest heaved between the second and fourth costal cartilages on the left, and pulsation was apparent in the epigastrium. The abdomen was notably distended. The tips of the fingers were markedly enlarged. Upon palpation marked pulsation was evident at the lower portion of the sternum, and also in the situation of the pulmonary artery. The area of cardiac percussion-dulness was increased, and formed a small square between the second and fourth ribs on the left side next to the sternum. On auscultation a systolic murmur was heard at the apex, and also over the sternum in the pulmonary area. The second sound was accentuated. The systolic pulmonary murmur was heard over the left carotid, though more faintly. The case was believed to be one of persistence of the foramen ovale.

Traumatic Hemothorax in the Newborn.—Gebhard (*Zeitschrift für Geburtshülfe und Gynäkologie*, Band 30, Heft 2, p. 402) has reported the case of an infant born with some difficulty by the pelvis with artificial aid. The resulting asphyxia was overcome by the institution of artificial respiration, but death took place three hours after birth. Upon the removal of the sternum a teaspoonful of liquid and dark-colored blood escaped from the right pleural cavity and two teaspoonfuls were additionally removed. Beneath the epicardium and near the coronary sulcus and the apex of the heart were several small extravasations of blood. Beneath the pulmonary pleura at the base of the left lung there was a more extensive extravasation, while over the upper lobe were several smaller ones. Upon removal of the thoracic viscera the pleura of the posterior wall of the right half of the chest was observed to be elevated by an effusion of blood extending along the vertebral column from the first to the sixth rib. Over the head of the second rib was a tiny wound of the pleura through which blood escaped. After careful removal of the pleura it was found that the second intercostal vein was ruptured at a point a few millimeters before its entrance into the azygos vein. There was no interruption in the continuity of the ribs or of the costo-vertebral articulations, although there was undue mobility of the head of the second rib in its articular capsule. The injury to the vein, with subsequent hemorrhage into the pleural cavity, was ascribed to the manipulations necessary to establish respiration, with the result of causing such compression of the lung as to lead to death.

THERAPEUTIC NOTES.

The Treatment of Diphtheria with the Antitoxin.—At a recent meeting of the Royal Society of Physicians of Vienna, WIDERHOFER (*Wiener medicinische Presse*, 1894, No. 52, p. 2013) reported the results obtained in 100 severe cases of diphtheria treated during October and November with the antitoxin. Of this number, 74 recovered, 24 died, and 2 were yet under observation. Bacteriologic examination was made in all instances but 2; diphtheria-bacilli were found in 96. For the preceding nine months the mortality had been 52.6 per cent.; for the corresponding two months of 1893, 44 per cent., of 1892, 39 per cent., and of 1891, 34.2 per cent. From 1862 the mortality has fluctuated between 32.3 per cent. and 71.9 per cent.

At a recent meeting of the Clinical Society of London, MACCOMBIE (*British Medical Journal*, No. 1774, p. 1484) related that of 31 cases of diphtheria treated with the antitoxin, 3 had died and 1 more was probably going to die. During the period of treatment a total of 54 cases came under observation; but to some, partly on account of the lateness of the period, and to others, partly on account of their age, the antitoxin was not administered. Among the whole number there were 7 deaths. In January, 1894, the mortality among 21 cases of diphtheria had been 42 per cent.; during February, among 17 cases 35 per cent.; during March, among 16 cases 31 per cent.; during April, among 24 cases 29 per cent.; during May, among 23 cases 30 per cent.; in June, among 32 cases 34 per cent.; in July, among 70 cases 37 per cent.; in August, among 43 cases 18 per cent.; in September, among 57 cases 29 per cent.; in October, among 48 cases 25 per cent.; in November, among 23 cases 25 per cent.

CAIGER (*Ibidem*) related that he had treated 30 cases of diphtheria with the antitoxin, with 8 deaths. Of these, 5 died within 12 hours of coming under observation, and 3 of the 5 within 3 hours. The mortality had previously been 30 per cent. for two months consecutively.

The Use of Sulphur in Surgery.—At a recent meeting of the Royal Medical and Chirurgical Society, LANE (*British Medical Journal*, No. 1770, p. 1239) reported the results of a year's experience with the use of sulphur in surgical practice. He found that neither sulphur nor the products generated by its decomposition acted prejudicially upon the life or health of the individual into whose body it was introduced. If placed in contact with recently-incised healthy tissues, twenty-four hours sufficed to render the parts sterile as far as organisms are concerned. If the recently incised or scraped surfaces be but poorly supplied with blood, as, for example, the brawny edge of a carbuncle, or the spreading gangrene of a limb, sulphur may be left in contact with the tissues advantageously for a considerably longer period. This also applies to granulating surfaces. The entry of other organisms into a tuberculous cavity does not influence the action of the drug, as it destroys all organisms, whether free in the cavity or intruding into the surrounding living tissues forming its wall. The action exerted by sulphur is a painless one.

Amblyopia Due to Di-nitrobenzol.—POCKLEY (*Australasian Medical Gazette*, vol. xiii, No. 10, p. 340) has reported the case of a "mixer" in a roburite factory, thirty-one years old, who complained of failure of sight. There had also been breathlessness, aggravated by exertion, blueness of the face, hands, and feet, and vertigo. There was ability only to count fingers at a distance of three yards. There was no central scotoma for red or green, and there appeared to be slight concentric contraction of both fields. The pupils were slightly enlarged and sluggish. The discs were uniformly pale and flat. Under treatment with strychnin, vision slowly but steadily improved. It appears that di-nitrobenzol is employed in the preparation of roburite, an explosive, and that breathlessness and blueness of the face are common among mixers that are careless as to the state of their hands. The symptoms may also appear as a result of inhalation of the fumes.

Pilocarpin for Urticaria.—ABRAHAMS (*Medical Record*, No. 1245, p. 342) recommends the employment of pilocarpin hydrochlorate in the treatment of acute and chronic urticaria, and reports three illustrative cases. To adults he gives from gr. one-sixth to gr. one-half daily or every second day, or even oftener, injected subcutaneously. To children the drug is administered by the mouth, to a child a year old, in doses of from gr. one-twentieth to gr. one-eighth, at bedtime; to a child from two to three years old in doses of from gr. one-fifteenth to gr. one-sixth.

MCBRAYER (*Medical Record*, No. 1252, p. 564) has reported a case of urticaria in a boy two years and nine months old, in which relief was afforded by the subcutaneous injections of gr. one-sixteenth of pilocarpin hydrochlorate.

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THE RELATION OF THE BACTERIOLOGIC DIAGNOSIS AND NEW TREATMENT OF DIPHTHERIA TO LABORATORY-INSTRUCTION.

To one who is in touch with the present tendencies in medical diagnosis and medical treatment many things are significant. These tendencies can be illustrated in no better way than by the recent work in the diagnosis and treatment of diphtheria, and, since the subject is so fresh and so universally interesting, we shall employ it for our text.

The very essence of the antitoxin-treatment of diphtheria is expressed by the word *specific*. The remedy is a specific for the disease consequent upon the invasion of a certain pathogenic microörganism—the Klebs-Loeffler bacillus. The blood-serum of a diphtheria-immune animal can neutralize only the toxins of the diphtheria-bacillus. It cannot, apparently, neutralize the poisonous products of any other pathogenic microbe. The identification of the organism exciting the disease, then, lies at the beginning of this new therapy of diphtheria. This is accomplished by the bacteriologic diphtheria-test. Furthermore, the remedy appears to be efficient as it is applied early in the disease; so that, not only is a bacteriologic diagnosis demanded in every case preceding the employment of the antitoxin, but an *early* diagnosis must be made.

The value of the diphtheria culture-test has been emphasized in other directions, especially by the work of the Health Department of New York City on the sanitary aspects of a positive diagnosis of membranous throat-diseases. This department has taken the initiative in a commendable effort to bring into its municipal laboratory all the work of diphtheria-diagnosis. We are justly proud of the results already accomplished by this body of energetic investigators, and it seems only natural that the example of New York, in this respect, will be followed in all of our larger American cities.

But the work of such a municipal laboratory, however extensive its operations and however delicate the adjustment of its details, can only hope to be most efficient in those matters of sanitary management hinging on the diagnosis of membranous throat-diseases. It cannot take from the work of the individual physician the tasks that legitimately fall to him—and we maintain that, like many another diagnostic procedure, the bacteriologic test for diphtheria as a prelude to the antitoxin-treatment is one of these tasks. This is so for several reasons. In the first place, it will naturally be a long time before this practice will become general, even among our large cities, for obvious reasons. Even when the work is universally operative in the larger cities, how shall the smaller towns and rural settlements of our vast country be reached? Then there is that ever-present obstacle, *political corruption* in our American cities. Even now, how many of the health-departments of our cities are beyond the influence of the miserable political rings that wield the power of government? Finally, under ideal conditions, the time consumed in a municipal diphtheria-diagnosis severely handicaps it for the requirements of the new treatment.

Looking at the question in all its aspects, there seems but one conclusion, viz., that the work of diphtheria-diagnosis ought to be pursued by each individual physician whose practice brings him into contact with cases of this character. Why should this not be so? Why should this one particular task be taken from the physician, while he is called upon, from time to time, to assume other, and no less difficult, procedures in clinical diagnosis? The culture-test for diphtheria is neither difficult nor complicated. Still, for its prosecution, a fundamental knowledge of bacteriology and bacteriologic technique is demanded; this, alas, the majority of physicians lack. The more energetic and enthusiastic of the younger physicians will acquire the knowledge necessary to enable them to apply, practically, the diphtheria culture-test.

Our great hope, however, lies in the young men now receiving their education in medicine. Are we doing our duties by them? The medical student to-day should be so well trained in laboratory-methods that he could apply, intelligently, not only the diphtheria culture-test, but many other laboratory-tests in diagnosis. This certainly implies a more elaborate and detailed laboratory-training than is now afforded by the majority of our medical schools. It argues, more forcibly than ever before, for that thorough and systematic education of our students that is so well exemplified in the leading biologic schools of our country. Surely, our medical educators will prove themselves equal to these new demands.

SYSTEMATIC INSPECTION OF LIVE-STOCK.

All classes of the community are awakening to the necessity of careful supervision of those domestic animals from which our food-supplies are derived. The relations between tuberculosis and dairy-farming are now so well understood that we need not here discuss them. In many of the United States satisfactory machinery does not exist by which proper inspection may be carried out, and efforts are being made to remedy this defect. Legislation on such questions must be framed with great care; the problems to be solved are novel and involve high technical knowledge; moreover some phases of the question are not fully elucidated by research. A difficulty arises at once in regard to compensation for animals slaughtered. This may be the major expense, and as in most of our States the agricultural classes have considerable political weight no bill is likely to get through a State Legislature unless the owners of animals are satisfied that no material loss will inure to them.

We have before us the text of an act laid before the present Pennsylvania Legislature, which is to create a State Live-stock Sanitary Commission. The first section provides for five commissioners, two to hold by virtue of office, namely the Secretaries of the State Board of Agriculture and of the State Board of Health respectively. The other members, designated by the Governor, are to be respectively a practical breeder and two regular graduates in veterinary medicine. The details of inspection, methods of procedure, and awards of compensation to owners of slaughtered animals are left to the commission. Full power is given to the commission or its agents to enter all places in which animals or carcasses may be kept, and wilful interference with these visitations is punishable.

It is said that this act has been drawn after consultation with all interests affected and under expert medical and veterinary advice. It is not stated whether legal advice has also been taken, though this is very important, as the phraseology of an act becomes often the means of rendering its operation unsatisfactory. We heartily commend the proposition, and hope that prompt legislative action may follow.

The attention which is now being given to this subject is shown strikingly by the recently-issued report of the State Board of Health of New York, in which a special volume of several hundred pages is devoted to the investigations made into the extent to which tuberculosis exists among the herds in that State. In many of these a large proportion of infected animals was found. It is worthy of note that herds of the finest grades are quite as likely (indeed, perhaps more likely) to be infected as inferior strains, and this indicates that the striving after special qualities of milk is liable to intensify the danger from disease.

The agitation of the question of the danger from the use of infected milk has resulted in diminishing the use of milk. Statistics show that in the last three years the amount of milk consumed in Philadelphia has remained stationary, in spite of the increase of population. Some writers on these questions think that unless medical reform is soon accomplished the decrease in the use of milk and milk-products will be so great as to prevent dairy-farming being profitably pursued.

EDITORIAL COMMENTS.

Courses Preparatory to Medicine.—The University of Nebraska is to be warmly commended for a step that it has undertaken in the direction of higher medical education. It is palpably wiser to include certain branches o study in preliminary courses, and thus to some extent lessen the burden of the medical course proper, and keep within reasonable limits the time necessary to be devoted to it. The University of Nebraska has instituted a special course preparatory to medicine, open to students of both sexes, and the requirements for admission to which are a fair mastery of English grammar, arithmetic, descriptive and physical geography, and elementary United States history.

A student presenting satisfactory certificates or passing creditable examinations will be given full credit for any work accomplished before entering the University; and can thus shorten the time to be spent there.

The first year's work includes a thorough course in English, a course in Latin, algebra to quadratics, and the first two books of geometry; the logic-making studies, and elementary courses in botany, chemistry, and physics. In the second year the student carries structural and physiologic botany; in chemistry, the metallic elements and their more common compounds, with five hours' laboratory-practice each week; rhetoric, and constant practice in theme-writing; lectures and laboratory-work in sound and heat, in physics, a strong course in general osteology; and lectures on hygiene and sanitation, with physical training in the gymnasium.

The third year is given to pharmaceutic botany; a continuation of the study of metallic elements, with special study of characteristic reactions—with the usual laboratory-practice; comparative anatomy and human osteology; histology and embryology; a course in psychology, including a study of the nervous system, sense-organs, psycho-physical methods and results, instincts, consciousness, attention, association, habit, memory, emotions, will, dreams, and hypnotism; and a course in general physiology.

Students completing the preparatory medical course receive certificates of their proficiency, and by special arrangement are admitted (without preliminary or entrance examinations) to the third year and second course of lectures of the Cincinnati College of Medicine and Surgery; to the second year in the Boston University School of Medicine, in the Medical School of the University of Pennsylvania, in the Omaha Medical College, and Creighton Medical College, and in the Northwestern Medical School (Chicago Medical College); and to the first year in the St. Louis Medical College, and the Department of Medicine and Surgery, University of Michigan. Other institutions of equal standing have promised similar recognition, but have not yet taken formal action.

The Medical Man and the Trolley-car.—Very soon doctors will have to enter the army or navy in order to escape peril to life and limb. The thoughtless public is delighted with their new conveyance, but the doctor finds it only a deadly peril. It helps him but little if his business is extensive, leaves him to carry by hand his various impedimenta, gives him long walks where the trolley company, *mirable dictu*, has neglected to seize a street, and long waits where it fails to run frequently, and lets him out only at prominent street-corners. He cannot make it wait in grandeur before the doors of his wealthy patients, nor will the motormen and conductors wear his livery. If he drives himself, it wears out his nerves and speedily makes him hysterical or melancholy, with its deadly wire or more deadly dread of collision hanging over the tracks he must cross and recross so often. His neck is sore and stiff from twisting his head to look out of the back window of his carriage, and his eyes take on a divergent squint, which no prism or graduated tenotomy can correct, from his efforts all day to see behind him with one eye while he looks ahead with the other.

At ordinary crossings he must look eight ways at once, and an ingenious scientist has calculated that at complicated crossings, like those in Philadelphia at Ridge Avenue, Spring Garden and Twelfth Streets, or at Twenty-second and Chestnut Streets—and there are many such—he will need to make at least twenty-six single and separate observations before crossing, while if we add to this the additional acts of observation necessary in avoiding foot-passengers at the various crossings and the carts and carriages occupying either side of each trolley track, with those preceding and following the car on each track, with special observations on the nature of the roadway as to holes, uncovered manholes, spots of ice and piles of snow in winter, as to whether the motormen, drivers, and foot-passengers are of imperfect sight or hearing, or imbecile, lame, or disabled from age, we have something like one-hundred-and-two distinct acts of observation needed, and a rapid judgment and decision based upon them, as to whether to go on, back out, or stand still, and this too in a time so short that human limitations as to the rapidity of sensory impressions and consequent motor reaction forbid in many cases the required action in the limited time given.

Yet upon this decision and action the safety and life of the driver will depend, to say nothing of the safety of innocent foot-passengers and others less innocent.

And, still further, the scientist estimates that in the usual morning's work of five hours this rapid observation and decision must be repeated, in more or less complicated conditions, on the average 63.4 times.

Moreover, the trolley-car pursues him after he is safely in his home, and even in his bed—not only with dreams and night-terrors of smash-ups and death, but the sleep-banishing, nerve-shattering gong, ringing always and unnecessarily, scares to death what little nervous and mental stability may be left after the day's wretchedness.

Is it any wonder that doctors are short-lived and that their lives are destined to still greater brevity? Furthermore, our scientist gives us but little hope of any immediate relief, but thinks that in the course of time Nature will, as usual, come to our aid, and bring forth by her handmaid—evolution—from her boundless storehouse new-posterior-occipital eyes, one or more, and that possibly, for here he is on uncertain ground, and fears to excite illusory hope, possibly, the great central cyclopean eye, rudiments of which still survive, may be furbished up in ten or twelve thousand years to meet the emergency temporarily, for the really serviceable new occipital eye, with sufficient backward projection and a swivel-socket like a lobster's, will take from twelve to twenty million years to evolve successfully. Thus does science ever light up the dark places of life with hope.

The Operative Treatment of Ulcer of the Stomach.—It is scarcely possible to assign the limits of modern surgery. Nature has been so prodigal in the dispensation of structure that parts of what have heretofore been considered vital organs may, under suitable conditions, be removed not only without injury, but even with advantage. The number of cases in which celiotomy and suture have been practised for the relief of perforation of a gastric ulcer is growing, and the results are most encouraging. **KÜSTER** (*Archiv für klinische Chirurgie*, Band 48, Heft 4, p. 787) has recently reported a case in which the indications were not quite so urgent, but in which both the symptoms and the results seem to have justified the procedure adopted. The case was that of a girl, twenty-one years old, who three days after lifting a heavy weight was seized with abdominal pain and vomiting. Emaciation occurred, and later convulsions with loss of consciousness. With the vomiting there became associated burning pain upon the right side of the abdomen. The stomach was greatly dilated, the gastric juice feebly acid and without free hydrochloric acid. The right kidney was rather freely movable, and the gastric symptoms were ascribed to the traction of this organ upon the pylorus. For the relief of this condition nephrorrhaphy was undertaken and the displaced organ attached to the quadratus lumborum muscle. Recovery ensued, though complicated by a mild attack of pneumonia. For a time the symptoms were ameliorated, but after more than a half-year the patient returned with abdominal pain and vomiting after the ingestion of food. At a later period copious hematemesis took place and was from time to time repeated. There was considerable loss of weight, and the anemia was pronounced. A diagnosis of ulcer of the stomach close to the pylorus was now made, and for the purpose of controlling the hemorrhage and avoiding secondary contraction the abdomen was opened by an incision parallel with the left costal arch. Upon the posterior wall of the stomach was found an ulcer about as large as a fifty-cent piece, to the surface of which the thermo-cautery was applied. The upper portion of the jejunum was drawn forward and united with the stomach, so that a large communication was established between the two viscera. Recovery was only interrupted by a deep abscess of the abdominal wall, but hemorrhage never recurred after the operation. The patient soon gained in weight and strength, and her former symptoms disappeared.

It is not likely that the conditions will frequently arise under which this method of treating ulcer of the stomach will become necessary, or that its application will be at all general; but both the physician and the surgeon will welcome any reasonable measure that promises to be an addition to their resources in dealing with a condition that is never without danger, and sometimes is most obstinate in its course, and even disastrous in its outcome.

The Relation Between Acute Rheumatism and Endocarditis and Myocarditis.—While it is generally conceded that acute rheumatism belongs in the category of infectious diseases, the proof of a specific mycotic etiology is yet wanting. It is true that several observers have described various organisms both in the synovial effusions and in the lesions of the complicating endocarditis; but the evidence is not sufficient, on the one hand, to ascribe to any one of these specific etiologic properties, or, on the other hand, to justify the conclusion that rheumatism, like pneumonia, may have a multiple etiology, although it is known that articular involvement occurs in connection with gonorrhea, typhoid fever, scarlatina, and smallpox, as well as with rheumatism The etiology of endocarditis is likewise somewhat obscured in doubt, though here the likelihood of multiple etiology is greater than in the case of rheumatism, and is strongly supported by the bacteriologic evidence. While the relation between rheumatism and endocarditis and myocarditis is recognized clinically, the nature of the etiologic relation has not been clearly demonstrated. In an interesting address before the Society for Internal Medicine of Berlin (*Deutsche medicin. Wochenschrift*, 1894, No. 49, p. 913) **LEYDEN** considered this subject, and reported a series of cases of acute rheumatism complicated by endocarditis, myocarditis, and pericarditis, singly or together, in most of which he was able to isolate a delicate diplococcus, differing from any hitherto described, and unequivocally distinguishable from the various forms of staphylococcus, the streptococcus, and the diplococcus of pneumonia. The inference to be drawn is that this organism is the cause of acute rheumatism, and likewise of the secondary complications.

Anti-oleomargarin Laws.—The organized movement to prevent the sale of oleomargarin has received a fresh impetus from a recent decision of the United States Supreme Court sustaining a Massachusetts statute. Divested of the technical phrases in which lawyers so generally indulge, the decision is to the effect that the prohibition of the sale of oleomargarin, when colored to look like butter, is a legitimate exercise of State's rights, and not contrary to the constitutional provision against interference with inter-State commerce. The newspapers, as usual, are wide of the mark in criticising the decision. Apart from the control that the corporations manufacturing oleomargarin on a large scale have, by reason of the advertising or other patronage they may wield, many well-intentioned journals are not informed as to the facts. The court well said that the only reason that oleomargarin is made to look like butter is to deceive the unwary. Yet we are told in an editorial in a prominent daily that there is no longer any danger of deception, and if there were such danger the marks on the packages would prevent it. The fact is that oleomargarin almost never reaches the consumer except under the pretence of being butter. No man or woman buys it knowingly for his or her own use. Those who deal in it wholesale handle it without any sight of it mostly, but it is the pound-packages, delicately colored, and neatly wrapped in muslin or waxed paper, and with imprints simulating butter, which are eaten. These packages have no label or mark to tell their true nature, and most persons eat the substitute believing that they are getting real butter.

A Grave Defect in Zoologic Manuals.—At the recent meeting of the Association of American Anatomists in New York, Professor **BURT G. WILDER**, of Cornell, reiterated, under the title "Loose Characterizations of Vertebrate Groups," a criticism already made in 1880, and again in 1885, in his Address as Vice-President of the Biological Section of the American Association for the Advancement of Science, viz.: Among characters that are alleged to distinguish groups from one another, some may really be constant and peculiar; but others are constant and not peculiar; still others may be peculiar but not constant, and others neither peculiar nor constant. A marked instance of this confusion occurs in a recent authoritative English work. Besides tending to bewilder the student, and even mislead the naturalist, Prof.

Wilder held that this ambiguity, in such marked contrast to mathematic and even linguistic treatises, prevented the recognition of natural science as a means of mental training and as a requirement for admission to colleges. As a remedy he urged that all natural history courses should embrace the principles and practice of logic, and that writers of manuals and text-books, while not neglecting correctness and completeness, should pay more heed to clearness and consistency.

Horse-meat as Food.—Some time ago a brief editorial allusion was made in THE NEWS to the rumors spread in Germany that horse-meat was being used in the canned meats sent from America. An investigation resulted negatively, but the rumors are again current, even in papers in this country. Some "reliable unknown" has stated that in Chicago a regular business is carried on in preparing horse-meat to masquerade as beef. If this be true, the question naturally suggests itself as to what sanitary bearing the subject has. Probably the horse is a safer source of meat-food than the animal that yields our beef. Of course, the sale of one meat under pretence of it being another is a fraud, and should not be tolerated; but it will be an interesting inquiry to determine just what is the dietetic value of the meat of the horse, and to what diseases, if any, will its use give rise.

REVIEWS.

MEDICAL JURISPRUDENCE, FORENSIC MEDICINE, AND TOXICOLOGY. By R. A. WITTHAUS, A.M., M.D., Professor of Chemistry, Physics, and Hygiene in the University of the City of New York, etc., and TRACY C. BECKER, A.B., LL.B., Counselor-at-law and Professor of Criminal Law and Medical Jurisprudence in the University of Buffalo. In four volumes. Vol. ii. Large 8vo, 751 pages. New York: Wm. Wood & Co., 1894.

WE have already noted with approval the first volume of this extended treatise. The present instalment includes some most important and disputed topics in medical jurisprudence. Dr. Edward S. Wood discusses the subject of blood-stains and other stains. This chapter is freely illustrated by views of highly-magnified blood-corpuscles from man and various domestic animals, and Dr. Wood inclines to the possibility of positively identifying, under favorable circumstances, human blood-stains.

The section on railway injuries, contributed by Dr. W. B. Outten, covers nearly two-hundred pages. It is an exhaustive review of this important field; indeed, it seems as if a disproportionate space has been given to it. However, there can be no doubt that a very large portion of the practice of lawyers and medical experts is devoted to this class of cases, and a comprehensive presentation of the subject will be of great service. Much attention is given to methods of railroad operation and construction, signalling, etc.

The subject of unnatural vices is also discussed quite at length, and in the main more plainly than in most works of the class. The revelations as to the forms of vice observable in some American cities are startling. There seems to us to be no reason for the use of Latin phrases in the definition of special forms of unnatural vice. A work of this kind does not fall into the hands of boys and girls, or even of adults other than those who know how to use it. There can be no objection, therefore, in defining clearly in scientific English every term used.

The volume also includes chapters on abortion, infanticide, rape, pregnancy, sexual incapacity, and malingering.

TEXT-BOOK OF HYGIENE: A Comprehensive Treatise on the Principles and Practice of Preventive Medicine from an American Standpoint. By GEORGE H. ROHÉ, M.D., Professor of Therapeutics, Hygiene, and Mental Diseases in the College of Physicians and Surgeons, Baltimore. Third edition, thoroughly revised, and largely rewritten. Octavo, 553 pages. Philadelphia: The F. A. Davis Co., 1894.

ONE of the most striking additions to the present revision of Dr. Rohé's favorably-known book is a series of questions appended to each chapter, and constituting a review of the topics discussed in that chapter. We have no particular criticism to make as to the questions themselves. They have been prepared by a competent teacher, and are largely of that type known to lawyers as "leading." We cannot, however, regard the insertion of these questions as in the interest of the best teaching. That they will add to the popularity of the volume in some ways is undoubted; indeed, such insertions are likely to be suggestions by publishers rather than by authors. They lead to cramming and a study of the work merely with a view to prepare for examination.

Apart from this, we have no objection to make to the book. It has been thoroughly revised, especially the chapter on quarantine, which was prepared by Drs. Walter Wyman and H. D. Geddings, of the U. S. Marine-Hospital Service. The chapter represents fully the moderns method of maritime sanitation. Medical Director Gihon has revised the chapter on marine hygiene, and this is, of course, a guarantee of excellence.

The work is comprehensive in scope, and contains a large amount of information well expressed. In the uncertain or disputed field of public hygiene, such as the use of stimulants, the author expresses himself with due caution.

The book is well printed. Illustrations are not numerous. The present edition will undoubtedly sustain the reputation the book has attained.

A MANUAL OF THE PRACTICE OF MEDICINE. By A. A. STEVENS, A.M., M.D. Lecturer on Terminology and Instructor in Physical Diagnosis in the University of Pennsylvania; Demonstrator of Pathology in the Woman's Medical College of Pennsylvania. Revised edition. 8vo, pp. 490 and Index. Philadelphia: W. B. Saunders, 1894.

THE present edition of this manual, the third, has been issued within two years of its publication. Demand for a book is certainly an evidence that it meets a want and, to some extent, that it also has merit. The merit and the success of manuals such as this lie chiefly in the fact that they closely follow the more voluminous standard text-books and present their subject-matter uniformly classified and much condensed. It were an advantage, however, if occasionally the author were somewhat less conservative. In ten pages on the urine, of which nearly two are devoted to the determination of grape-sugar, the phenyl-hydrazin test, so valuable for its simplicity and sensitiveness, is not mentioned. Again, the diagnosis between varicella and variola is said to depend, among other things, on the absence of umbilication and inflammatory areolæ from the lesions of the former—one of those classic blunders that survive repeated correction.

Medical, Pharmaceutical, and Dental Register-directory and Intelligencer, for Pennsylvania, New York, New Jersey, Maryland, Delaware, and the District of Columbia. Third edition, pp. 836. Philadelphia: George Keil, Editor and Publisher, 1894.

This book contains the names of physicians, druggists, and dentists in the States mentioned, arranged alphabetically, and in the large cities also numerically by streets, the school and year of graduation, and office-hours in cities; a list of colleges, State societies, and national associations, asylums, homes, hospitals, dispensaries, etc., as well as the latest laws in these States. It should serve a useful purpose. Among many reputable advertisements we regret to see a number that are not so.

Essentials of Chemistry and Toxicology. By R. A. Witthaus, A.M., M.D. Twelfth edition. 16mo. 292 pages, and index. New York: William Wood & Co., 1894.

This is a student's pocket compend, the repeated editions of which have enabled its author to keep it up to the times. The present edition uses the revised spelling of chemic terms. It contains a large amount of information clearly expressed. We cannot, however, refrain from placing on record our disapproval of the question-and-answer system which the work employs.

Directory of Trained Nurses. Philadelphia: J. Albert Cornell, 1894.

This little book ought to subserve the useful purpose for which it was designed, that of bringing the nurse on the one hand in easy communication with patient and physician on the other hand.

CORRESPONDENCE.

FIN DE SIÈCLE MEDICAL SCHOOLS AND HOSPITAL MANAGEMENT.

To the Editor of The Medical News,

Dear Sir: As the century wanes, along with the plague of seventeen-year locusts and serpentine dancers, comes the advertising hospital.

The "regular" medical profession of New York, as you probably know, is, like Gaul, divided into three parts: "Old coders," who only consult with each other; "new coders," who consult with anybody, and "no coders," who—well, this name is hardly appropriate, for they have a code, conspicuous for its simplicity and comprehensiveness. It is "every man for himself and the devil take the hindmost;" and it begins to look as though the poor, East-side physician of New York was the one thus relegated to the caloric custody of the evil one.

The New York Post-Graduate Medical School and Hospital was located in a part of the city already well supplied with hospitals and dispensaries, and teeming with reputable and struggling medical men. It has recently completed and opened with considerable flourish "a large six-story, fire-proof structure, of 98 feet frontage, and 110 feet in depth, with accommodations for 195 patients and 250 matriculates," and a dispensary of unlimited capacity. Recent events seem to indicate that the hospital, in its new and fire-proof garb, is beginning to appreciate its redundancy, and one can almost hear the multitudinous attending staff clanking through the empty wards which should resound with the yelp of the colicky child, while the humble interne dodges behind, sniffling the air thus far at least aseptic.

Indications point to the babies' wards as the chief sufferers from vacuity and ennui; and who can think, without pain, of the spotless diapers, fluttering with suppressed desire to be the first on which some incipient Turner shall execute his maiden study in meconium yellow?

By indications, I mean advertisements in the daily press.

The *New York Daily News*, Thursday, December 6, 1894, contained the following advertisement:

"The babies' wards of the New York Post-Graduate Hospital, corner Second Avenue and Twentieth Street, are reopened for Medical and Surgical Diseases of Infants and Young Children (contagious diseases excepted); no charge to poor. Cases admitted by House Physician in Babies' Reception Wards of Dispensary Department between 9–12 A.M. and 5–6 P.M."

Then follows another advertisement for lying-in women, closing with the legend, "Doctors furnished at any hour, night or day," which reminds one of the card seen on ice-wagons, "Good work-horses to let by the day or week." This offer would seem to imply that East-side doctors were too busy to answer calls during the day, and either disconnected their door-bells at night or slept away from their offices in a palatial residence on Riverside Drive.

Now, these advertisements are no East-side joke, nor are they inserted to help along a struggling paper. The hospital needs babies to cheer its sunny, fire-proof wards with colicky coo and vivacious vomit, and something must be done also to limber up the long forceps and cephalotribe which hang rusting on their pegs.

Why this apparent dearth of vernal humanity? Why this coyness in a region where the very air is rendered fertile by gas-works and garbage-strewn streets?

If an advertisement the hospital must have, it is well placed, as in an adjoining column are advertisements of cheap midwives (?), "reliable on female irregularities," "successful in female complaints," who guarantee "perfect safety," "privacy," and, much to the disadvantage of the hospital, "adoption of infants." In the column on the other side, "Old" Drs. Smith, Gray and Grindle, and Drs. Hallett and Hawker make promises which no incorporated institution can rival or equal. They guarantee to strengthen "weak organs," to render plump "shrunken organs," and to magnify "undeveloped organs." They promise to restore "vigor" and "lost manhood;" they correct "errors of youth," and remove "impediments to marriage," as well as "shyness" and "blotches."

It strikes me the hospital is handicapped at the start by its neglect to promise the "adoption of infants" and the sure cure of "scalding" and "trembling," "red-spots" and "restless nights."

To apologize for advertising on the plea of informing the poor of the purposes of the hospital would be disingenuous. The poor and, still better, the medical beats of New York know full well the uses of hospitals and dispensaries, and are also sharp enough to take advantage of the premium on clinical material. Few patients, particularly if they have an interesting complaint, need pay for expert advice or treatment nowadays, so numerous and hungry are the various clinics. The forty-eight hospitals of New York City do not advertise, yet in 1893 they treated in their wards 78,945 patients. Neither do the thirty-three dispensaries advertise, except for charitable contributions: still, in 1893, they treated 626,160 patients, showing conclusively that the class for which charitable medical institutions are built need not be told their purpose in the daily press.

There are too many hospitals and dispensaries in our large cities; too many clinical professors. There is too much injudicious and undeserved medical charity. If a hospital cannot be filled without illegitimate advertising, it should be shut up. If a starving doctor should openly advertise, the Committee on Ethics of some Pharisee Medical Society would at once brand him as unclean, and he would be shunned by his fellows as a leper. But a *body* of doctors can illuminate the ash-barrels, dead-walls, and curbstones of a whole city with their posters, and can invade the advertising columns of the poor man's paper, alongside of abortionists, clairvoyants, and quacks, but to this the Committee on Ethics is blind. But why not? since in Committees on Ethics are generally to be found some of the most flagrant ethical offenders!

Little redress will the East-side physician be likely to get; but let him soliloquize with Cheney—

> "Who drives the horses of the sun
>   Shall lord it but a day;
> Better the lowly deed were done,
>   And kept the quiet way."

R. W. AMIDON, M.D.

19 WEST TWENTY-FIRST STREET, NEW YORK CITY.

SCARLATINA AND MEASLES IN THE SAME PATIENT.

To the EDITOR OF THE MEDICAL NEWS,

SIR: I desire to report a case of scarlatina complicated by measles, similar to that cited in your issue of December 29, 1894, as reported by Ferguson in the *British Medical Journal.*

On June 10, 1894, I was called to see a girl, eight years old, whose neck, chest, arms, etc., I found covered with a diffuse scarlet exanthem, and who also had a moderately-severe angina, with elevation of temperature, appearance of tongue, and other symptoms peculiar to scarlatina.

After two or three days the eruption faded, desquamation became well established, and the child progressed favorably. On the ninth day the face, neck, chest, and arms became the seat of a typical papular eruption of measles, the temperature and pulse rising slightly, with coryza and cough, though the symptoms were decidedly less severe than are usually found in uncomplicated measles. In spite of this unpleasant feature the child made an excellent and uninterrupted recovery and with no sequel.

The question that arose in my mind was, What was the source of infection? I excluded the nurse and myself, the only two in attendance upon the child; the former because she was constantly with the little patient, and myself for the reason that I had no case of measles under my care at the time, nor for some time before.

Respectfully,

G. A. HIMMELSBACH.

137 W. TUPPER STREET, BUFFALO, N. Y.

NEWS ITEMS.

Collective Investigation upon the Operative Treatment of Malignant Neoplasms of the Larynx.—With the object in view of securing sufficient data to lead to an intelligent conclusion on a number of doubtful points in the treatment of malignant neoplasms of the larynx, Dr. Johann Sendziak, 139 Marzatkowsk Strasse, Polish Russia, has issued an appeal to laryngologists and surgeons soliciting replies to the following questions:

1. Name and address of the operator.
2. Age and sex of the patient operated on.
3. General condition of the patient. (Were the lymphatic glands affected or not?)
4. Laryngoscopic image. (Right or left side?)
5. Diagnosis (clinical or microscopic).
6. Date of operation (day, month, year).
7. Character of operation (endolaryngeal, thyreotomy, total or partial laryngectomy).
8. Result of operation (cause of death; recurrence—when? Recovery. Date of last examination or last report).
9. Source of report or unpublished case.
10. Remarks (general views, etc.).

Medical Society of the State of Pennsylvania.—The members of the Medical Society of the State of Pennsylvania who wish to read papers at the meeting to be held at Chambersburg, May 21–24, 1895, are requested to send their names and the titles of the papers to the chairman of the Committee on Scientific Business, Dr. Charles W. Dulles, 4101 Walnut Street, West Philadelphia.

The committee desires papers to be *absolutely* no longer than ten minutes.

At the last meeting a large number of interesting papers were not read because those preceding them were too long, and it is to be hoped that those who prepare papers for the coming meeting will condense them *as much as possible.* The laws of the Society permit each writer to occupy twenty minutes, but it is thought that it will be of advantage if the members of the Society do not avail themselves of all their privilege.

To Philadelphia Bacteriologists: The Councils of the city of Philadelphia having appropriated fifteen thousand dollars for the purpose, it is the intention of the Board of Health to establish a Bacteriological Laboratory.

Under the law governing appointments in Philadelphia, the Bacteriologist and Assistant Bacteriologist must be selected from a Civil Service eligible list. The undersigned have been appointed by the Mayor as an Examining Board for the purpose of the examination, which will be held in about two weeks. Meanwhile blank applications can be had at the office of the Director of the Department of Public Safety, Room 217, City Hall.

The salaries to be paid are, under the appropriation ordinance, to be fixed by the Board of Health and the Mayor, whose desire it is to secure competent men without regard to the salary to be paid.

It is hoped to conclude the examination in one day.

E. O. SHAKESPEARE, M.D.,
W. M. L. COPLIN, M.D.,
ERNEST LAPLACE, M.D.

The Third International Dermatological Congress will not be held this year, as proposed. The time of meeting has been postponed. because the British Medical Association meets in London this summer, and it was feared by the Executive Council of the Congress that the autonomy and international character of the Congress would be imperilled by holding its meeting at the same time and place, as well as that the necessarily divided interests of the British dermatologists would prevent that full exercise of hospitality to their foreign visitors that they so much desire to extend. As the next meeting of the International Medical Congress will be held in Moscow in 1896, it is possible that the Dermatological Congress may not be held until 1897.

Testimonial to Sir Henry Acland.—It is proposed to make the retirement of Sir Henry Acland from the Regius Chair of Medicine in the University of Oxford the occasion of a memorial to be devoted toward increasing the usefulness of the Sarah Acland Home for Nurses, an institution that provides district nurses and medical appliances for the poor, and maintains private nurses and a medical and surgical home to which patients unable to afford the ordinary fees are admitted on a reduced scale of charge. It is hoped that a fund of £10,000 can be raised; £1055 have already been subscribed.

The Honorary Treasurer of the Fund is the Warden of All Souls' College, at Oxford.

Dr. William Osler, according to late report, has been offered the Presidency of McGill University. We are highly pleased to state that Dr. Osler will not leave Johns Hopkins, and his hosts of friends in the States will be delighted to learn of this determination; indeed, medical men everywhere will be equally glad to know that medical science, which he has enriched with his genius, is not to be deprived of his most valuable service.

Intercollegiate Foot-ball.—The presidents of Indiana colleges, at a recent conference in Indianapolis, decided to prohibit intercollegiate foot-ball contests between the students of the institutions over which they preside.

Prize-essay on Tuberculosis.—Dr. Herman Weber, of London, has given the Royal College of Physicians $12,500 for the foundation of a prize to be offered every two or three years for the best essay upon tuberculosis.

Science.—The publication of this popular and useful journal has been resumed, and its direction placed in the hands of a staff of earnest and competent workers in different departments of scientific research.

The Pennsylvania State Board of Medical Examiners will meet on February 14, 1895, in Philadelphia, at the northwest corner of Broad and Pine Streets, to examine applicants for license to practise medicine in the State.

Physician to Howard Hospital.—Dr. Alfred Stengel has been elected physician to Howard Hospital, succeeding Dr. F. M. Luther, who resigned.

Dr. d'Arsonval has been appointed to the chair of medicine in the College de France, in succession to the late Prof. Brown-Séquard.

The Practitioner.—Dr. Malcolm Morris has succeeded Drs. Lauder Brunton, Donald MacAlister, and Mitchell Bruce in the editorial conduct of the *Practitioner*.

The Internationale Klinische Rundschau is hereafter to be known as the *Wiener klinische Rundschau*.

Prof. Wolfler, of Gratz, has been elected to the chair of surgery in the University of Prague.

BOOKS AND PAMPHLETS RECEIVED.

Stomatitis Neurotica Chronica. By A. Jacobi, M.D. Reprinted from the Transactions of the Association of American Physicians, 1894.

Ueber Hitze-Sterilisation des Katgut. Von Prof. Dr. Max Schüller. Sonder-Abdruck aus Nr. 30 des Aerztlichen Praktiker, 1894.

Ein Beitrag zu der Chirurgischen Pathologie und zu den Operationen der Parotisgeschwulste. Von Dr L. Mandowsky. Sonder-Abdruck aus Nr. 32 des Aerztlichen Praktiker, 1894.

Medical Archeology: The Sanitary Regulations of Ancient Egypt and Judea. From the Work of Dr. Beugnies Corbeau. Translated by Thomas C. Minor, M.D. Reprinted from the Cincinnati Lancet-Clinic, 1894.

School Document No. 8—1894. Report of the Director of Physical Training, Adopted by the Committee on Hygiene and Physical Training, as its Report. Boston: Rockwell & Churchill, 1894.

The Principles of Bacteriology: A Practical Manual for Students and Physicians. By A. C. Abbott, M.D. Second edition, enlarged and thoroughly revised. Philadelphia: Lea Brothers & Co., 1894.

Restriction of Tuberculosis. By J. H. Davisson, M.D. Reprinted from the Journal of the American Medical Association, 1894.

Sanitation of Dwellings, Public Buildings, and Thoroughfares. By J. H. Davisson, M.D. Reprinted from the Proceedings of the Second Annual Sanitary Convention, held under the Auspices of the California State Board of Health, at San Jose, April 16, 1894.

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ORIGINAL ARTICLES.

AINHUM.[1]

BY WALTER L. PYLE, A.M., M.D.,
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AINHUM may be defined as a pathologic process, the ultimate result of which is a spontaneous amputation of the little toe. It is confined almost exclusively to negroes, chiefly males, and of African descent. In Brazil it is called "ainham" or "quigila." "Ainham" literally means to saw, and is doubtless a colloquial name derived from a supposed slow, sawing process. The Hindu name for it is "sukha pakla," meaning dry suppuration.

In 1866, da Silva Lima, of Bahia, at the Misericordia Hospital, gave the first reports of this curious disease, and for quite a period it was supposed to be confined to Brazilian territory. Since then, however, it has been reported from nearly every quarter of the globe. Relative to its geographic distribution I will make a brief summary of reports from different localities:

South America. Da Silva Lima and Seixas, of Bahia, have reported numerous cases in Brazil, as have Figueredo, Pereira, Pirovano, Alpin, and Guimares. Toppin reports it in Pernambuco.

Egypt. Mr. Milton reports a case from Cairo, and Dr. Creswell at Suez, both in slaves.

Trinidad. E. A. G. Doyle reports several cases at the Fernando Hospital.

African Coast. Digby reports its prevalence on the west coast of Africa, particularly among a race of negroes called Krumens. Messum reports it in the South African Republic, and speaks of its prevalence among the Kaffirs. Eyles reports it on the Gold Goast. It has also been seen in Algiers and Madagascar.

India. Through the able efforts of Her Majesty's surgeons in India the presence of ainhum has been shown in India, and considerable investigation made as to its etiology, pathologic histology, etc. Wise at Dacca, Smyth and Crombie at Calcutta, Henderson at Bombay, and Warden, Sen, Crawford, and Cooper in other portions of Southern India have all rendered assistance in the investigation of ainhum.

In *China* a case has been seen, and British surgeons speak of it as occurring in *Ceylon.*

British Guiana. Von Winckler presents an admirable report of twenty cases at Georgetown.

St. Thomas. Dr. Potoppidan sends a report of a case in a negress.

The disease has several times been observed in *Polynesia.*

North America. Dr. Hornaday reports a case in a negress from North Carolina, and, curious to relate, O. Horwitz, of Philadelphia, and Shepherd, of Canada, found cases in negroes both of North Carolina antecedents. Dr. James Evans reports a case in a negro, seventy-four years of age, at Darlington, S. C. Dr. R. H. Days, of Baton Rouge, La., had a case in a negress, and Dr. J. L. Deslates, also of Louisiana, reports four cases in St. James Parish. I have seen a case in a negress, aged fifty years, in Washington at the Emergency Hospital.

The foregoing summary shows the universal distribution of the disease, the Arab, Hindu, Mussulman, and even the Mongolian being susceptible as well as the negro.

So prevalent is the disease in India that Crawford found a case in every 2500 surgical cases at the Indian hospitals. The absence of pain or inconvenience in many instances doubtless keeps the number of cases reported few, and again we must take into consideration the fact that the class of persons afflicted with ainhum are seldom brought in contact with medical men.

Ainhum is a much more common disease than has heretofore been supposed, and as such deserves a careful consideration.

The disease usually affects the fifth phalanx at the inter-phalangeal joint. Cases of the fourth and other phalanges have been reported. Cooper speaks of a young Brahmin who lost his left great toe by this process. Crombie speaks of a simultaneous amputation of both fourth toes. Potoppidan reports a similar case in a negress on St. Thomas Island. Sen reports a case in a supernumerary digit in a child, whose father, a Hindu, lost a toe by ainhum. Eyles reports a case in a negro in whom the second finger was affected. Mirault, at Angiers, speaks of a case in which two fingers were lost in fifteen days, a fact which makes his diagnosis dubious. Beranger-Ferrand has seen all the toes amputated, and there is a wax model by Baretta, Paris, in the Army Medical Museum at Washington, in which all the toes of the right foot have been amputated, and the process is fast making progress at the middle third of the leg.

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[1] Read before the Pathological Society of Philadelphia, November 8, 1894.

Ainhum is much more common in males than in females; it is in fact distinctly rare in the latter. Of Von Winckler's twenty cases all were males. It may occur at any age, but is most common between thirty and thirty-five. It has been reported *in utero* by Guyot, and was seen to extend up to the thigh, a statement that is most likely fallacious. However there are well-authenticated cases in infants, and again in persons over seventy years of age.

In some few cases the metatarso-phalangeal joint is affected; but no case has been seen at the base of the ungual phalanx.

The duration of the disease is between two and four years, but Dr. Evans' case had been in progress fifty years. It rarely runs its full course before a year.

Reports conflict as regards the influence of climate on this disease. Wise, at Decca, says it is most common in damp or rainy weather, while Crombie and Smyth, also in India, report cases from the dry highlands associated with goiter. Climate, perhaps, has no influence on it. Dry, hard ground causes more pain in walking, and the dry cold winds, spoken of by Crombie, exert their influence indirectly in this manner.

There is a difference of opinion again regarding the soil favorable for its development. Sandy soil is reported to be a cause, and the Egyptian reports attribute it to working in salt. Seixas, of Bahia, an authority, says the wearing of boots does not prevent it. Weight-carriers are most affected, particularly on a hard soil, according to some Indian observers. We can, therefore, form no definite conclusion as to the influence of soil outside of the extra pain caused by walking on a hard soil.

Symptoms. Ainhum begins as a small furrow or crack, such as soldiers often experience, at the digito-plantar fold, seen first on the inner side. This process of furrowing never advances in soldiers, and has been given a name more expressive than elegant. In ainhum the toe will in a few days swell, and a pain, burning or shooting in nature, may be experienced in the foot and leg affected. Pain, however, is not constant. There may be an erythematous eruption accompanying the swelling. The furrow increases laterally and in depth, and meets on the dorsal aspect of the toe, giving the toe the appearance of being constricted by a piece of fine cord. As the furrow deepens the distal end of the toe becomes ovoid, and soon an appearance as of a marble attached to the toe by a fibrous pedicle presents itself. By this time the swelling, if any, has subsided. The distal end of the toe bends under the foot, and becomes twisted when walking, and causes inconvenience, and, unfortunately, says Eyles, it is in this last stage only that the Fanti presents himself. There is in the majority of cases a small ulcer in or near the digito-plantar fold, which causes most of the pain, particularly when walked on. This ulcer does not occur early, and is not constant. The case under my observation showed no ulceration, and was absolutely painless, the negress applying for diagnosis rather than treatment. The furrow deepens until spontaneous amputation takes place, which rarely occurs, the patient generally hastening the process by his own operation, or by seeking surgical treatment. A dry scab forms at the furrow, and when picked and repicked constantly re-forms, being composed of horny desquamation or necrosis.

The *histology* of ainhum shows it to be a direct ingrowth of epithelium, with a corresponding depression of surface due to a rapid hyperplasia that pushes down and strangles the papillæ, thus cutting off the blood-supply from the epithelial cells, causing them to undergo a horny change. We are indebted to C. H. Eyles for the best description of the histologic change as observed microscopically.

The disease is not usually symmetrical, as formerly stated, nor is it simultaneous in different toes. There are no associated constitutional symptoms, no tendency to similar morbid changes in other parts, and no infiltration elsewhere. There is little or no edema with ainhum.

Crombie made measurements of the circumference of both the left and right toes in a case of ainhum, as follows: Circumference at bottom of furrow, right, 1⅞ inches; left, 1¼ inches. Circumference of distal phalanx, right, 2⅛ inches; left, 2⅞ inches. This demonstrates the lack of symmetry of the morbid process.

As a rule, sensation is not destroyed, although cases of anesthesia have been reported. There is usually no change in the nail. Weber compares the appearance of the distal end to a diminutive potato. The dorsal tendon stands out as a white cord, surrounded by a black ring. Eyles made his studies in a section hardened in Müller's fluid, and stained *en masse* in picro-carmin or eosin. The changes resemble somewhat the morbid process seen in lupus. The hypertrophy of the epidermis at the tip approximates one mm. in thickness, while that near the constriction equals 5 mm. in thickness. In the stratum corneum there is seen an hypertrophy of the interpapillary process, which is irregular. In the stratum lucidum the hypertrophy is uniform, and this layer in the posterior portion of the section becomes fused into the layer above. Instead of the characteristic appearance of an indistinct layer ot two or three cells deep, we see a layer of distinct cells twelve or fifteen deep.

Hypertrophic change is seen in the stratum granulosum also. In the stratum malpighii, anteriorly, while the interpapillary processes increase in all dimensions, slender processes, composed of double columns of closely-apposed pigmented (germinal) epithelium are seen which pass down, splitting the papilla. As the stage of separation advances these processes, which are formed by the evolution of the germinal layer covering the top of the papilla, give off shoots that coalesce with shoots of adjacent processes, and a network is formed, the trabeculæ of which consist of double layers of pigment-cells. Eyles describes the appearance on transverse section as a sheet of more or less typical prickle-cells, which is perforated by round or oval islets of papillary material, each islet being surrounded by a single layer of pigmented epithelium. Posteriorly, the entire thickness resembles the stratum corneum; the only foreign representative is a layer of pigment-cells, which may take the form of dim processes or form a small network. As to dermal or sub-dermal changes, there is seen a hyperplasia of fibrous tissue, subsequent to chronic inflammation. As concerns vascular changes, the larger arteries show an increase in adventitia, but little change in the muscular coat, though proliferation of connective-tissue elements may increase it. The intima is subject to a process similar to an endarteritis obliterans, which decreases or obliterates the lumen. As the vessels become smaller or capillary they are surrounded, if anteriorly, by a small round-cell infiltration, or, if posteriorly, by fibrous tissue. The section of the specimen can thus be distinguished. The capillary loops undergo a hyaline change, and there is fusion of the endothelial plates. In the veins the adventitia and endothelium are swollen. As to glandular changes, Eyles' observation showed a thickening occasionally of the membrana propria by the addition of white fibrous tissue. There may be fatty change in the distal end of the coil, and the lumen becomes less.

The osseous changes consist in a rarefying osteitis, which advances regularly from the periosteum, but irregularly toward the center. There is little attempt at new bone-formation, and cavities are formed which eventually become filled with a reticulum of delicate fibrous tissue, capillaries, and oil-globules. There is a gradual conversion into fibrous tissue.

Eyles made little or no observation of nerve-changes; but there is doubtless a process identical with that seen in neuritis of any duration.

The similarity to epithelioma is seen by the foregoing description; but there is no infiltration or epithelial hyperplasia at the side or in the vicinity of the furrow, this being confined to the deepest portion.

In ainhum there is, first, simple hypertrophy, then active hyperplasia. The papillæ are pushed down and deprived of blood-supply, and undergo horny change. Meanwhile the pressure thus exerted on the nervivasorum sets up vascular changes which bring about epithelial changes in more distant areas, the process advancing anteriorly, that is, in the direction of the arteries. This makes the cause, according to Eyles, an inflammatory and trophic phenomenon due mainly to changes following pressure on the vasomotor nerves.

Etiology. The theories of the causation of ainhum are quite numerous, and I will take them up individually.

The influence of soil and climate has already been discussed

The first cause is the admirable location for a furrow in the digito-plantar fold, and the excellent situation of the furrow for the entrance of sand or other particles to make the irritation constant, thus causing chronic inflammatory changes, which are followed subsequently by the changes peculiar to ainhum.

The cause has been ascribed to the practice of wearing rings on the toes; but von Winckler says that in his locality (British Guinea) this practice is confined to the coolie women, and in not one of his twenty cases had a ring been previously worn on the toe; in fact, all of the patients were males. Digby says, however, that the Krumens, among whom the disease is common, have long worn brass or copper rings on the fifth toe. Again, the natives of India, who are among those most frequently afflicted, have no such custom.

Injury, such as stone-bruise, has been attributed as the initial cause, and well-authenticated cases have been reported in which traumatism is distinctly remembered; but Smyth, Weber, and several other observers deny that habits, accidents, or work, are a feature in causation. The case I saw gave no history of traumatism.

The American observers of most recent date advance the theory of pathogenic organisms; but the immunity of people not dark-skinned seems to contradict this, together with the fact that there is no history of contagion in ainhum. Collas say the disease is amputating leprosy, but the fact of its being localized and the absence of constitutional symptoms contradict this theory. The affection has been called pityriasis Ethiopium and scleroderma annulare. Frontau denies its existence as a distinct disease.

To summarize, none of the theories advanced bears discussion but that of Eyles, and, from my own observation of the process, there is pressure of the hypertrophied fibrous tissue subsequent to continued irritation on the vaso-motor nerves, to which pressure the peculiar morbid changes of ainhum are due. It is really a tropho-neurosis. Heredity seems to exert little influence.

The diagnosis is easy. No other disease resembles it. Gangrene is distinctly different. In frost-bite there is a history of cold, and this affection is of short duration.

The absence of constitutional symptoms and its limited field of occurrence distinguish ainhum from leprosy and from elephantiasis.

I have compiled a list of all the existing literature of the subject in the Surgeon-General's Library at Washington, and herewith append it.

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TROPHIC LESIONS OF THE JAWS IN TABES DORSALIS.

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TROPHIC changes in the jaws have been much less frequently observed in tabes dorsalis than the disturbances in the nutrition of the joints and the bones of the extremities which so interestingly vary the course of that most common disease of the spinal marrow. Although the first observations of a tabetic maxillary affection were published as long ago as 1868, a German author[1] in 1891 was not able to collect more than twenty-two cases. All of these were gathered from the French and German literature. Brief mention of the loss of teeth may occasionally be met in some English or American work, but no description of the typical tabetic disease of the jaw is presented. It is therefore hoped that the following account of a case which was observed at the San Francisco Polyclinic will not be deemed superfluous.

The patient, a man forty-three years of age, came under observation February 6, 1894, complaining of shooting pains in the lower extremities. Twenty years ago he had three or four soft venereal sores followed by suppurating buboes. No syphilitic symptoms supervened. During eighteen years of married life his wife had been well and had borne him three children, two of whom still live and are healthy, while the other died at fourteen years of some acute disease. About eight or nine years ago there were two miscarriages.

The patient was in good health until about seven years ago, when he was seized with his present disease—rather acutely, according to his account. While lifting a heavy piece of lumber he felt something give way in his back, and was unable to stand upright for several days thereafter. Then he staggered in walking, his legs yielded, and his thighs felt numb. A week after the injury there was complete retention of urine, and the catheter had to be passed during five or six weeks. The bladder gradually recovered to a great extent, but some weakness of the urinary current has persisted. For several years past he has experienced no normal desire to micturate, and passes his water at regular intervals, not in response to any stimulus, but as a matter of habit and prudence. When worried he is compelled to have recourse to the catheter. The bowels gave no cause for complaint.

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[1] Rosin: Deutsche Zeitschrift für Nervenheilkunde, 1891, Bd. i, p. 532. This writer collated the cases reported up to that date and appended a bibliography to his article; but his list is not quite complete. Since then Hudelo has recorded a case in Annales de Dermatologie et de Syphiligraphie, May, 1893, and Wickham has republished this case and added another in the same journal for January, 1894. A review of several French cases, most of which are referred to by Rosin, will be found in a paper entitled "Les Altérations Dentaires au Cours du Tabès," by Lemarié and Albert Bernard in L'Odontologie, February, 1894; a translation of this paper is contained in the Pacific Coast Dentist for May, 1894. In his contribution to the jubilee-volume of the University of Halle ("Ueber traumatische Tabes," etc., 1894; page 27 of the reprint), Hitzig gives a brief account of a tabetic patient observed in 1870 who had been affected in 1863 with the jaw-disease now under consideration. A case is mentioned by Gowers in his Manual of Diseases of the Nervous System, second American edition, vol. i, p. 411.

For over two years after the time from which he dates his disease he had pain in the small of the back, and needed the support of a cane in walking. When the pain ceased and his gait improved the lightning-pains began in the legs and in the sides of the trunk, sometimes darting up into the left arm-pit, and they have continued to torment him frequently. There is no girdle-sensation. Sexual power is abolished. There have been neither laryngeal nor gastric crises. Vision is not disturbed. Some care is required to "regulate his walk," especially when descending stairs.

Incidentally the patient remarked that, although he had never suffered from toothache, he had in the course of the last three or four months lost thirteen of his upper teeth. He had previously had slight neuralgia in the right cheek and temple. The falling out of the teeth was quite painless and attended with very little or no bleeding. Thus, while eating, he would become aware that a tooth was loose, would easily extract it with his fingers, and then proceed with his meal, or the tooth would not even require "picking" (as the patient termed it), but fell spontaneously into his mouth.

He furthermore related that two pieces of bone had recently been painlessly cast off from the left side of the upper jaw.

In the course of his illness this man had taken a considerable quantity of drugs, among them potassium iodid, especially during the last two years, but he has not had stomatitis nor been salivated.

On the 6th of February the patient was described as a gray-haired individual of medium height. A large cicatrix in the right groin was the only reminder of the venereal infection. His gait was not conspicuously ataxic, but the usual tests disclosed a moderate degree of incoördination in the lower limbs. Romberg's symptom was quite marked. There was the Argyll-Robertson pupil, and the left pupil was larger than the right. The knee-jerks were absent, as were also the plantar reflexes. The cremasteric reflex was faint on either side; the abdominal reflex was present and brisker on the right than on the left side, being rather excessive on the former; the right abdominal reflex could be provoked by stroking the upper part of the anterior and inner surfaces of the right thigh, as in the manipulation employed to produce the cremasteric reflex. There was slight anesthesia at the outer and inner borders of the feet and on the outer surface of both thighs; the anesthesia was more marked in the right gluteal region. Sensation was said to be less acute in the left half of the abdominal surface than the right, but this difference was purely subjective.

There was no anesthesia or ataxia in the upper extremities. The triceps reflex was not obtained; the periosteal reflexes of the forearm were present. Sensibility in the face was normal. The special senses were unimpaired. Thirteen teeth of the upper jaw were missing; only the two central incisors and the right wisdom-tooth remained. The lower set was complete.

In that part of the left superior maxilla from which the two fragments of bone mentioned by the patient were eliminated the gum[1] was swollen and lacerated, exposing the bone and secreting pus. This region, as well as the rest of the upper gums, was insensitive to pain; prodding the mucous membrane with hot needles or tapping on the exposed bone produced no discomfort. There was much tartar on the lower teeth, and the gums were irritated; the two central incisors were somewhat loose and tender. This was the first time the patient had ever experienced anything like pain in a tooth. Apart from this, there seemed to be some analgesia of the lower gums also. Sensation in the tongue and mucous membrane of the cheek was preserved, also in the nasal mucosa.

On the 26th of February the patient reported that a few days before he had felt something loose in the left side of the upper jaw, and with his tongue had dislodged a third piece of bone, which he brought for inspection. The exfoliation of this sequestrum was perfectly painless. The sequestrum contained an alveolus. After this event the erosion of the gum promptly began to heal, and in a short time only a depression in the alveolar process marked the site of the necrosis. One of the lower incisors, which was loose and tender, was extracted at about this time by a dentist, as it projected beyond the line of the teeth, and was deemed superfluous. Its extraction was stated to have been quite painful. It is well to emphasize the fact that this trouble in the lower jaw was solely due to the accumulation of tartar. There has been no disturbance since.

Until nearly the middle of May there was no further alteration in the patient's dental condition. Then another breach was made in his ἕρκος ὀδόντων, for the two remaining upper incisors became loose, and he "picked" one of them himself without pain or bleeding, while a dentist removed the other with almost equal ease. Soon the same process was established at the site of these teeth as had previously taken place on the left side of the upper jaw, and on the 7th of June a fragment of bone was exfoliated. After this the lesion of the gum quickly healed.

On the 11th of June the patient complained of pain on the inner side of the right cheek, opposite the molars. Inspection revealed the presence of an ulcer of the gum, extending forward from the last molar about an inch, and invading laterally the mucosa of the cheek, but displaying no tendency to spread toward the hard palate. The ulcer was quite pale and torpid; excepting where it encroached on the cheek it was analgesic; it exposed the bone, which was evidently necrotic, and secreted considerable pus.

At this stage of his disease the man was shown to several dentists who had convened in San Francisco to attend the Mid-Winter Fair Dental Congress. A number of the teeth which had been shed were carefully examined and pronounced sound. It was established that their falling out was not due to pericementitis, pyorrhœa alveolaris, or any other process with which dentists ordinarily have to deal. Dr. William J. Younger, a dentist of more than national reputation, testified that this maxillary disease was all but unique in his very extensive experience.

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[1] It had been subjected to dental treatment before the patient came to me.

No palpable fragments of bone were cast off from this ulcer, but the alveolar process was nevertheless undergoing disintegration, for soon a probe entered the antrum through the ulcer without encountering resistance. Many weeks elapsed before a tendency to heal became manifest. Finally, however, the gums closed again over the bone, leaving a long delicate cicatrix over the depression in the alveolar process and a small opening leading into the antrum.

On the 25th of June the right wisdom-tooth dropped out, and the denudation of the upper jaw was now complete. A sharp-pointed instrument inserted into the socket of the tooth provoked no pain. It was now about nine months since the "devastation had begun," but not yet was the "business of destruction done."

In the beginning of July, long before the ulceration of the gums on the right side had healed, a small ulcer appeared in the gum on the left side of the upper jaw at about the site of the last molar. This erosion gradually extended forward until it reached the locality of the left lateral incisor. It was pale, atonic, and analgesic. Like its companion on the other side of the jaw, it occupied the external half of the alveolar ridge, tending to invade the cheek, but avoiding the roof of the mouth. The bone was exposed, and there was a discharge of thin pus. No fragments of bone were eliminated, but there was evident osseous decay, for soon the antrum was opened. It was not until the middle of October that this ulceration had healed, leaving a still larger depression in the alveolar process than had been produced by the necrosis in February, and the fistula of the antrum.

At present (in the last week in October) no destructive process is visible in the jaw, but a recurrence must be apprehended.

Although not pertinent to the subject under immediate consideration, the patient's clinical history may be supplemented by adverting to an event of the 28th of June. On the morning of that day, as he was about to board a street-car, his left leg suddenly gave way at the knee; it felt "as if weighted with a ton," and seemed devoid of sensibility. When seen in the afternoon, the patient's gait was very unsteady, and he was forced to support himself on a cane; the ataxia was now quite marked, but it was much more conspicuous in the left leg than in the right. Tactile sensation was not so profoundly altered as the patient's account might have led one to suppose, but it was somewhat blunted in the left lower leg and foot as compared with the right; there was a distinct reduction of electro-cutaneous sensibility in the former; the retardation in the conduction of painful and thermic impressions amounted to five seconds in the left foot and three seconds in the right; and the muscular sense was now greatly disturbed in both lower limbs, but especially in the left one. There was also some loss of power in the left foot, but the muscles reacted well to the faradic current. Romberg's symptom was more marked than before.

With this acute onset, or at least sudden increase, of incoördination, there came a cessation of the lightning-pains. The appetite, sleep, and digestion improved, and the patient was enabled to resume his work (as a distributer of quack-advertisements!).

Unfortunately, during the cool weather prevailing in the middle of August the pains recurred with all their former severity. Then the disturbance in the leg began to abate, and examination a month later disclosed decided improvement in regard to the steadiness of the gait and some diminution of the other symptoms. The patient now walks without any support; but the lightning-pains continue to torment him.

The subjective and objective symptoms as herein set forth are sufficient to establish the diagnosis of tabes dorsalis.

With respect to the changes in the jaw and the loss of teeth, this case conforms on the whole to the manner in which these disturbances took place in the majority of cases reported in neurologic literature. A survey of all the accessible records, however, shows certain variations in the extent and the rapidity of the destructive process, as well as differences with regard to the period of tabes in which the maxillary disorder may supervene.

The immunity of the lower jaw in the present instance is worthy of note. In no case does the disease appear to have involved the lower jaw before the upper had been affected. Either both jaws are seized simultaneously, or (as in the larger proportion of cases) the upper becomes diseased first. Years may elapse between the onset of the trouble in the upper jaw and the implication of the lower.

As has been said, the shedding of the teeth and the destruction of the bone progress with variable rapidity. A few teeth having dropped out, and a necrotic fragment of bone having been exfoliated, a pause may succeed, lasting in some instances for years, before more teeth and more of the substance of the jaw undergo the same fate; or the denudation of the jaw may be completed in a very short time; thus, in one instance,[1] two weeks sufficed to deprive the upper jaw of all its teeth; and Gowers[2] tells of a patient who found that all his upper teeth fell out in the course of three days, without any pain or decay.

The maxillary disease may appear at any stage of tabes dorsalis. In some instances over twenty years had elapsed since the onset of the latter; in others fifteen, ten, seven, and four years respectively, and one individual is related by Hoffmann to have lost all his upper teeth in the characteristic way over one year and a half prior to the first typical manifestations of tabes.

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[1] Hoffmann: Berliner klinische Wochenschrift, 1885.

[2] Manual, I, p. 411.

The dropping out of the teeth is sometimes unattended with necrosis of the jawbone. In two such cases the patients were affected also with the loss of their nails, and in another there was a perforating tabetic ulcer of the foot.[1]

In Wickham's paper on "Ulcérations buccales tabétiques" (*Annales de Dermatologie et de Syphiligraphie*) a patient is described who was afflicted with three perforating plantar ulcers, two on one foot and one on the other. This individual had lost in a comparatively short time, without pain, all his upper teeth and a number of his lower teeth, and the alveolar process was atrophied. There was on the alveolar border of the upper jaw a large, indolent ulcer apparently like those seen in my patient, but evincing a tendency to extend toward the roof of the mouth; it was anesthetic and penetrated to the bone, and Fournier, considering it to be of the same nature as the perforating ulcers of the foot, proposed to call it "*mal perforant buccal.*" In another case observed by Wickham and previously reported by Hudelo, this same maxillary affection was not associated with trophic lesions in any other part.

As far as can be judged from the description, there seems to be no essential difference between these "ulcérations buccales tabétiques" and those which in my patient exposed the bone. It has been seen that the latter are not necessarily associated with the elimination of appreciable fragments of bone, although the bone at the base is decayed, and that they ultimately heal in one part, while others form in other localities. We may agree with the statement of Wickham that the characteristics of these lesions are well marked; indeed, they are so pronounced that Fournier was enabled in the second case which he encountered to diagnosticate tabes simply by inspection of the mouth.

I have not been able to ascertain any instance in which this affection of the jaws accompanied any other nervous disease than tabes dorsalis.[2] Nor does it seem to occur as an independent disorder, and its distinction from the effects of phosphorus, actinomycosis, and other agents deleterious to the jaws and teeth meets with no difficulty. Syphilis, which is credited with so preponderant an influence in the production of tabes, cannot be held directly responsible for this jaw-disease associated with tabes, and we have Fournier's authority for the statement that Hudelo's case was not syphilitic.

Atrophy of the jawbones, especially the upper, and loss of teeth, may occur also in facial hemiatrophy, but the course and the attending circumstances are different in the two disorders. Their pathology, however, may be fundamentally identical, both being the supposed result of impaired trophic influence of the fifth nerve. It is interesting in this connection to note the coincidence of facial hemiatrophy and tabes dorsalis in a case reported by Jolly.[1]

The fifth nerve has been found affected in its trunk, ganglion, roots, and nuclei in various cases of tabes which had presented symptoms in the area of its distribution during life. But the only necropsies of cases in which the tabetic jaw-disease was among these symptoms are those recorded by Demange,[2] who made an anatomic examination of an individual who, about the fifteenth year of his tabes, had lost in less than two months all the teeth of his upper jaw, one after the other, in the characteristic manner; there was marked inflammation of the trigeminal nerves and atrophy of their bulbar nuclei. In another case observed by the same writer all the upper teeth on the left side had dropped out in the course of a month, while those on the right side were almost intact.[3] The autopsy disclosed atrophy of both fifth nerves, that of the left greatly exceeding that of the other, and there was also complete atrophy of the left Gasserian ganglion.

The anesthesia resulting from the disease of the nerve is by no means sufficient to account for the disturbance in the nutrition of the jaw; this has been proved by clinical observation and experimental research. We are constrained to assume an alteration of the trophic influence exercised by the nervous apparatus on the tissues. The trophic action of nerves has been as vehemently denied as it has been asserted in the discussions on the pathology of certain other lesions observed in the course of tabes;[4] it is the failure to corroborate the theory of such action by experimental methods that has prevented its general acceptance as an explanation of occurrences like this disease of the jaw. The recent labors of Gaule[1] have, however, shown how subtle are the conditions that determine the success or failure of experimental investigations on the trophic properties of the nervous system; it is to be hoped that the further prosecution of these researches may result in elucidating by experiment the effects wrought in cases like this by disease.

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[1] Weizsäcker observed a patient with loss of teeth, necrosis of the upper alveolar process, and tabetic disease of the knee-joints. Referred to by Rosin.

[2] Westphal demonstrated in 1885 to the Berlin Neurological Society a man "who had been suffering for several years from severe neuralgia in the area of the right trigeminal, especially its maxillary branches, and now presented a peculiar disturbance in the nutrition of the gums and the teeth of the right upper and lower jaws." Archiv für Psychiatrie, Bd. xvii. I have not met with any other reference to this case, explaining the nature of the "peculiar disturbance."

[1] Berliner klinische Wochenschrift, 1891, p. 924. No mention is made in this case of a maxillary or dental trouble.

[2] Revue de Médecine, March, 1892. Quoted in L'Odontologie, February, 1894, p. 67.

[3] Charcot exhibited a tabetic woman with anesthesia of the left side of the face, loss of taste in the left half of the tongue, and falling out of teeth on the left side. Leçons du Mardi, 1887 to 1888, p. 85.

[4] See the debates at the Clinical Society of London, November and December, 1885.

INVESTIGATIONS CONCERNING THE ETIOLOGY OF SMALLPOX.

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THE question of the etiology of smallpox is one of the most interesting topics in bacteriology, and has been the subject of a considerable number of investigations during the last thirty years. A brief historic sketch illustrating what has hitherto been done in this line should, naturally, precede the record of my own investigations. The complete history of the question will be embodied in my final report to the Iowa State Board of Health, under whose authority my work[2] was carried on during the course of this year.

Numerous writers have investigated the lymph both of smallpox and vaccinia, and some have found specific micro-organisms, both animal and vegetable, which they have regarded as the primary cause of the disease or of the specific eruptions.

One of the micro-organisms heretofore more or less generally recognized as the effective agent is the *micrococcus vaccinæ* and *variolæ*;[3] Bareggi has stated that the micro-organisms of smallpox and those of vaccinia are identical.[4]

In 1868 Chauveau[5] proved that vaccine-virus is deprived of its active constituents by filtration. Hence, it became very probable that the contagion was a living organism. "For when he carefully poured a stratum of water upon a layer of lymph in tiny tubes he obtained a diffusion of the dissolved material into the water; but this clear solution could not produce pustules like the insoluble residue."

In the same year Hallier[6] described micrococci obtained from human smallpox and cow-pox eruptions.

Luginbuehl[1] discovered, in sections cleared with acetic acid, micrococci that formed colonies at certain places in the skin, near the epidermis, in smallpox eruptions.

Beale[2] found in smallpox-lymph "vast multitudes of minute particles of living matter or bioplasm," but he did not consider these the *causa morbi*.

Cohn[3] showed the presence of numerous cocci in vaccinia- and smallpox-lymph, and named them *microsphæria*, or (later) *micrococcus vaccinæ*. The organisms were quite distinct, and Cohn demonstrated their specific nature, and contended that they did not represent a stage in the development of some other organism.[4]

Weigert[5] found micrococci in the pustules of smallpox when the disease was not too far advanced and also in the blood-vessels of certain internal organs in which eruptions may be observed.

Klein[6] observed that in sheep-pox the lymphatics are filled with micrococci.

Klebs[7] has made statements that the organisms (micrococci) in vaccinia-lymph and variola-lymph exhibit peculiar physiologic and morphologic peculiarities (being about $0.5\ \mu$ in diameter), and that they must belong to the cocci which, onthogenetically, assume no other shape. In accordance with their peculiar arrangement (being grouped in fours), they were named *micrococcus quadrigesimus*.

In 1885 Voigt[8] examined the vesicles of vaccinia, and found three species of micrococci, two cocci, and a diplococcus, and in the same year L. Pfeiffer[9] published his first communication upon smallpox. The latter found in the characteristic eruptions a sprouting fungus (*Saccharomyces*) and certain saprophytic bacteria, but none of these occurred constantly. I might add in this place that the sprouting fungus that was described as a *Saccharomyces* does not belong to this genus,[10] but to the group *Torula*, in the sense of Pasteur and Hansen.[11] In vaccinia-lymph I have occasionally found a *Torula* that corresponds to Hansen's fifth species. The cells observed by Pfeiffer did not bear spores; they have no causal relation to smallpox. This *Torula,* certain saprophytic bacteria, and the animalculæ that Pfeiffer five years later reported[1] from the pustules, will appear in many other eruptions, and will not be treated of on this occasion.

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[1] Berliner klinische Wochenschrift, 1893.

[2] Preliminary reports which contain some views not in accord with later results of the work were printed in the Iowa Health Bulletin, 1894, vii, 184; viii, 21.

[3] Cf. Crookshank, Manual, 1886, p. 203; Klein, Microörganisms and Disease, 1886, pp. 79, 80.

[4] Sul microbi specifici del vajuolo, del vaccino e della varicella. Gaz. med. Ital. Lomb. Milano (8) 1886, vi, 480, 506, 519, 529, 545.

[5] Comptes Rendus, 1868, lxvi, 289, 317.

[6] Aerztliches Intelligenzblatt, 1868, xv, 95.

[1] Verhandl. d. phys. med. Ges. in Wuerzburg, 1873, iv, 99, 114.

[2] Disease-germs: their Nature and Origin. London, 1872, p. 148,; pl. xviii, fig. 64.

[3] Arch. f. pathol. Anatomie, 1872, lv, 229, 238.

[4] Compare also Loeffler. Vorlesungen ueber die geschichtl. Entwick d. Lehre von den Bakterien, 1887, i, 132.

[5] Ueber Bakterien in der Pockenhaut. Centralbl. f. d. med. Wissenschaften, ix, 606-611, 1871. Ueber pockenaehnl. Eruptionen in innern Organen. Deutsche Zeitschr. f. prakt. Med. 1874, i, 367-369.

[6] Phil. Trans. Roy. Soc., Lond., 1874: cf. Microörganisms and Disease, 1886, p. 69.

[7] Arch. f. experiment. Pathol. und Pharm, 1879, x, 222.

[8] Deutsche med. Wochenschrift, 1885, xi, 895-97.

[9] Ueber Sprosspilze in der Kälberlymphe. Correspondenz. Blatt d. allgem. aerztl. Ver. von Thüringen, xiv, 96-97, 1885.

[10] See my paper in the American Naturalist, 1893, xxvii, 685-696.

[11] Cf. Joergensen, Microörganisms and Fermentation, 1893, p. 190, and Bay, Amer. Monthly Micr. Journal, 1894, xv, 42

It appears that some of Pfeiffer's drawings, as well as Beale's "bioplasts," indicate serious misinterpretation of the microscopic pictures.

L. Voigt[2] described, in 1885, three different forms of cocci from smallpox pustules. All liquefied gelatin, and Voigt considered one of them the probable carrier of the contagion. No definite results were, however, obtained.

In 1882, Pohl Pincus[3] proved that specific micrococci pass through the epidermis of the calf when the latter is inoculated therewith.

Hlava[4] considered the united attack by different pyogenic cocci the cause of the disease and eruptions, while Koch and Feiler were of the opinion that, although some of the saprophytic microorganisms in vaccine-lymph are pathogenic, they do not carry the contagion.

Crookshank[5] found in vaccine-lymph a great number of common saprophytic bacteria, but no specific organism.

Copeman[6] also published investigations, but found no specific carrier of the virus.

Rille,[7] in 1889, observed cocci in the vesicles and blood of persons suffering from varicella, but was unable to cultivate them.

It is very probable that Sternberg[8] was right in stating, in his text-book, that the etiology of smallpox still remains undetermined. Still, some of the investigations cited furnish very interesting points that will be valuable to those who wish to go over the field again.

Micrococci of different shape and character are, however, not the only bacteria that have been observed in smallpox and vaccinia. A few statements point toward the presence of other bacteria, namely, bacilli. Crookshank (loc. cit., 1892) mentions that he found in vaccine-lymph *bacillus pyocyaneus, bac. subtilis,* different bacterial forms, and a bacillus resembling *bac. subtilis.*

Dr. S. C. Martin[9] has described a bacillus of vaccine-lymph, the ends of which are rounded or square, and which may form micrococci (?) arranged in chains of five or six cells. He admits the possibility that both a bacillus and a micrococcus are present.

Coze, Feltz, and Baudoin[1] have discovered bacilli in the blood of variola. Upon injection of such blood into the veins of a rabbit typical symptoms of variola were produced.

In sheep-pox-lymph examined by Zimmermann,[2] three bacilli were found, one of which was very much like the *bac. amylobacter* van Tieghen. A second preparation contained a short-limbed bacillus; both showed large numbers of the *micrococcus vaccinæ* (or *variolæ*). All of Plaut's plates demonstrate bacilli which he was able to cultivate.

Toussaint's bacilli are mentioned in the dissertation by Plaut already referred to.

In April last vaccine-points were procured from Dr. Hewitt's vaccine-station, at Red Wing, Minn. A watery solution of the lymph adhering to the point contained, when examined by a magnification of 1160 diameters (Bausch & Lomb, Oc. C2, obj. $\frac{1}{12}$ oil-immersion), a few amorphous bodies, which assumed a yellowish color with iodin-potassium, iodid, and a few round bodies and irregular masses (probably nuclei or fragments of cells) dispersed in a clear, slightly-opaque fluid. I could distinguish among these bodies no micrococci or other bacteria, and no staining revealed any living organism. Some of the round bodies occasionally found (*i. e.,* in every second or third field of the microscope) may have been bacteria, but their nature was not revealed by the microscope.

A series of plate-cultures upon Pasteur gelatin[3] (10 parts of gelatin to 90 parts of Pasteur's fluid) was then arranged, but there occurred no development. Then test-tube cultures were made in Pasteur's fluid alone, and in beef-bouillon (one pound of meat to one liter of water) rendered alkaline with sodium chlorid. The vaccine-points were grasped with forceps, passed through a flame, and dropped into the fluid, which had been previously submitted to fractional sterilization, as in the usual preparation of culture-media. Great care was exercised, in order that no infection from without should take place.

On exposure to a temperature of 24° C. (75.2° F.) the culture-fluid would, on the first day after inoculation, become slightly turbid; on the second day the turbidity was increased, a thin film being formed upon the surface; and on the third day a grayish, highly-tenacious film made its appearance. Microscopic examination demonstrated the presence of colorless, non-motile bacilli, with a long diameter measuring from $0.6\,\mu$–$1\,\mu$, and the short diameter from $0.2\,\mu$–$0.3\,\mu$. During the first and second days they seemed to develop in separate colonies of from twenty to two hundred organisms each, although under the microscope many organisms appeared to be free and isolated. Macroscopically, the zooglea had, to a great extent, the same appearance as the film-vegetation of the yeast like genus *mycoderma*, being folded and of a greasy aspect. On the fourth day fragments of the zooglea begin to descend to the bottom, and the macroscopic appearance of the culture remained, after this, unaltered for three weeks and more. During this period, however, the microscopic appearance of the bacilli became greatly modified.

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[1] Die Protozoen als Krankheitserreger. Jena, 1890.

[2] Deutsche med. Wochenschrift, 1885, xi, 895–897.

[3] Vaccination, 1892. (Not seen.)

[4] Sbornik Lékarsky, 1887, ii, 96–105.

[5] "On the Bacteriology of Vaccine-lymph." Transactions Seventh International Congress of Hygiene and Dermogr., 1892, ii, 326–27.

[6] Loc. cit., *supra,* 319–326.

[7] Wiener klinische Wochenschrift, 1889, Nos. 38 and 39.

[8] Manual of Bacteriology, 1892, pp. 528–29.

[9] Boston Medical and Surgical Journal, 1893, cxxix, 589.

[1] *Vide* Magnin-Sternberg, Bacteria, 1884, 410, 464.

[2] Plaut: Das organisirte Contagium der Schafpocken, 1882, p. 22.

[3] Salomonsen: Bacteriol. Technology.

FIG. 1.

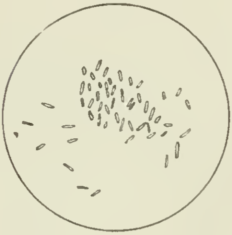


FIG. 2.

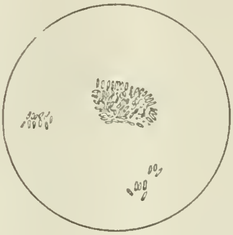


FIG. 3.

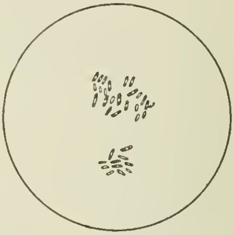


FIG. 4.

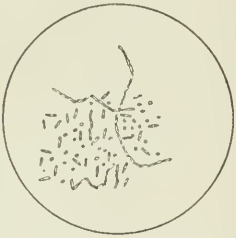
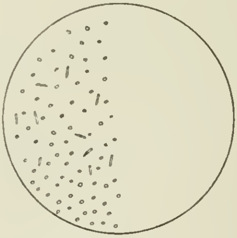


FIG. 5.



EXPLANATION OF FIGURES.—All of the figures are drawn from the pictures rendered by Bausch & Lomb, Oc. C2, obj. $\frac{1}{12}$ oil-immersion.

Fig. 1. *Dispora variolæ* growth in Pasteur's fluid, two days old.

Fig. 2. Same, four days old. Cells from surface-film.

Fig. 3. Same, eight days old. Growth in bouillon, spores being frequent.

Fig. 4. Same, twenty-five days' culture in bouillon.

Fig. 5. Same, thirty-five days' old culture in bouillon. Cells very scarce, free spores predominating.

This organism was found, with three exceptions, in examinations of sixty-five cultures from vaccine-points. Buttersack, whose recent investigations will be mentioned at the close of this paper, ventures the supposition that the specific organism of vaccinia and variola has not hitherto been detected because of its index of refraction being identical with that of the medium. I saw no reason for this supposition, and I am prepared to explain Buttersack's theory from my own observation. The bacilli that I observed have very much the same appearance as those found by Plaut.[1]

Already at the beginning of the development the bacilli bear spores. Each organism contains two spores, one at either end. This being the most conspicuous feature of the organism I assign it to the genus *Dispora*, established in 1882 by Kern, and name it *Dispora variolæ*. On the sixth day after inoculation free spores are found, both in the fluid and in the zooglea, but not before, although afterward, in the course of development. The spores are globular, highly refractive, and may be mistaken for what appear to me as vacuoles when a magnification of 2000 diameters is used. Still, the vacuoles are less refractive than the spores, and their form is rectangular (cubic) or slightly oval and a little irregular.

The same organism was also found in the lymph from a case of confluent smallpox kindly furnished by the Smallpox Hospital in Chicago. Of forty cultures in bouillon made from this lymph, only two failed to show the presence of the bacillus.

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[1] Loc. cit., Beilage i–iv b, especially ii a.

When cultures, both from vaccine and from smallpox lymph, were examined on the eighth day after inoculation, the organisms appeared to be crowded together in distinct masses, each cell being surrounded by a rather thick layer of a gelatinous substance. Free spores were abundant.

As the culture grew older the organisms gradually became longer and longer, and on the fourteenth or fifteenth day the culture presented the appearance shown in Fig. 4. The organisms formed long, thin threads. Spores were abundant, both *in situ* and free. The number of cells henceforth gradually diminished, and on the thirtieth day very few were seen, the spores predominating. When traces of this last stage of the culture were transferred, with the utmost precautions, into a new medium, development promptly followed as already described.

The following method of staining gave very good results: A small drop of the culture was placed between two covers and slightly pressed between them. The covers, having been separated in the usual way, were placed, moist side upward, under a bell-glass. When some of the fluid had evaporated the clean sides of the covers were placed three times, for a period of two or three seconds, in the immediate neighborhood of a flame, with the thin film which was to be stained turned away from the flame. When completely dry the covers were placed in alcohol for two or three minutes, and again dried under a bell-glass; then they were brought to float, film-side downward, on anilin-blue or anilin-violet for twenty-four hours, washed, dried, and mounted in the usual way.

While this organism presented the appearance of a specific bacillus-form, I was not convinced thereof until I had made a fractional culture in bouillon, which resulted in time in a uniform development in ten or fifteen out of twenty flasks; the control-tubes revealed no development.

Regarding the polymorphism of this species, I can state that I have observed no such swellings at the middle or ends of the long cells in old cultures as Martin[1] noticed in the bacilli found by him, or as Hansen[2] described for the bacteria producing acetic acid.

From the figures of *micr. vaccinæ* and *variolæ* that I have seen I am inclined to believe that this organism is not specific, but that it represents merely the free spores of *Dispora variolæ* mihi. I also believe that the facts in regard to the spread of smallpox, as well as the observations already recorded, lead to the conclusion that the spores are the main source through which both variola and vaccinia are reproduced.

Buttersack[1] a short time ago published an account of certain bodies that occurred constantly in vaccine-lymph, and which may have some relation to vaccinia. He allowed lymph to dry on covers, and, having fixed the latter to the slides by mean of beeswax, he inspected the film by immersion and observed a network of fine threads, with small, refractive, round bodies. Landmann,[2] Dräer,[3] and Czaplewsky[4] interpreted Buttersack's discovery as threads of fibrin and other albuminates. I would, *à priori*, assume that Buttersack had seen the thread-stage of the organism found by me. Not having seen Buttersack's illustrations, I can, however, say nothing certain about this.

Experiments extending the knowledge of the natural history of the organism which I suppose to be the primary cause of vaccinia and variola are in progress. It is also within the range of my program to study the possibility of preparing vaccine in the laboratory.

SIX INSTANCES OF COLOR-BLIND WOMEN OCCURRING IN TWO GENERATIONS OF ONE FAMILY.

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The occurrence of congenital color-blindness among women is, according to most experienced observers, a rare thing. Soelberg-Wells[5] holds that "the congenital form is frequently hereditary, affecting several generations of the same family; that the hereditary form comes oftener from the mother's side than the father's; that the males are affected much oftener than females, though in some families only the latter were found color-blind."

Meyer[6] fixes the relative frequency in men and women at from 3 to 5 per cent. in the former to less than 1 per cent. in the latter. He states that the condition is hereditary and is transmitted on the mother's side, although she herself is not affected with it.[7]

Wolfe,[8] after quoting full comparative statistics as to the frequency of the anomaly in men, goes on

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[1] Loc. cit.

[2] Comp. Rend. Laboratoire de Carlsberg, 1894, iii, 265–327.

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[1] Arbeiten a. d. kais. Gesundheitsamte, 1894, ix, 96–110.

[2] Hygienische Rundschau, pp. 433, 434, 1894.

[3] Centralbl. f. Bakteriol. und Parasitenkunde, 1894, xvi, 561–564.

[4] Ibidem, pp. 921–925.

[5] Text-book (Bull), 1883.

[6] Text-book, 1887.

[7] This would seem to be in accordance with a similar law that obtains in a peculiar form of optic-nerve degeneration described by Leber, Habershorn, Norris, and Gould, and aptly designated by the last "Homeochronous Hereditary Optic Atrophy." (*Vide* Annals Ophth. and Otol., 1893, p. 303.) A law similar to that mentioned seems to prevail in hemophilia and also in idiopathic muscular atrophy.

[8] Text-book, 1882.

to say, "Females are generally considered to be rarely deficient in color-perception." De Schweinitz[1] remarks that color-blindness is extremely rare in women. Fuchs[2] merely points out the relative immunity of females, and remarks that this perhaps finds its explanation in the continuous education of color-perception (going on through countless generations) to which the members of the gentler sex are subjected from their early childhood.

Noyes[3] fixes the frequency in females at ½ per cent.

Fontenay[4] (Copenhagen), working in Denmark, found the condition in $\frac{2}{5}$ per cent. among 3819 women, and Jeffries,[5] of Boston, in 13,458 carefully-conducted examinations on females in the schools of Boston, found but 0.006 per cent. of this number presenting subnormal color-perception.

In view, therefore, of the infrequent appearance of this anomaly, it is thought that the following history may be of interest, and deserves recording:

Mrs. S., about fifty years of age, a physician's wife, complained of asthenopic symptoms that had recently been sufficiently annoying to induce her to seek counsel. Vision in both eyes was slightly below the normal. The right eye presented a small degree of hyperopia, and the left eye a moderate degree of hyperopic astigmatism (simple), which when corrected, gives her normal visual acuity. With the addition of sph. 2.00 D. for the near point, she reads type 0.50 D. from 10 to 17 inches.

Ophthalmoscopic examination without a mydriatic shows both nerves a trifle pallid, each presenting a deep eccentric physiologic excavation, and being shallowly cupped to the temporal side. The scleral ring was broad and well-marked to the outer side. The vessels were normal.

During the examination Mrs. S. volunteered the information that for as long as she could remember her color-sense had been defective. She stated further that two of her sons were similarly affected, and my pleasure at meeting a color-blind female was greatly enhanced when the patient announced that two of her sisters had the same peculiarity.

Qualitative investigation of the color-sense with Oliver's series of wools revealed complete confusion of the dark-green, dark-red, and brown. The lighter shades were better distinguished. Rose and blue were in like manner confounded. The conditions just noted were found exactly reproduced in her youngest son's eyes.

At my request, the patient furnished me with a fairly full account of the family ramifications, extending through four generations, and designating the affected individuals. It was then learned that all of the patient's sisters (numbering three) exhibited impaired color-perception, and that her only brother also possessed the defect. Thus, in this one branch of the family, all are the subjects of subnormal color-perception. The explanation of the involvement of this whole family is to be found in the history of their antecedents.

Their father was one of a similarly-afflicted family. Both his brothers and his three sisters were color-blind, a most rare occurrence.[1] Moreover, their father married a woman who, though possessed of normal color-sense,[2] had an only brother who was entirely color-blind.

Unfortunately, the history could not be traced back to the patient's paternal grandparents. She says that the grandparents on her mother's side were not color-blind as far as she had been able to gather the facts.

As to the patient's children, two of her three sons are affected, while her daughter is immune. It is worthy of remark that one of the affected sons is a twin-brother to the one who is free from the defect.

In reviewing this genealogy the following interesting features are found:

1. The involvement of two entire families in color-blindness.

2. The occurrence, within two generations, of six cases of subnormal color-perception in females.

The unusual prevalence of this affection in the family of the patient's father can only be theoretically accounted for. No facts concerning the parents have as yet been obtained. It is reasonable to assume, however, that one or perhaps both of the paternal grandparents were deficient in color-perception.

In the matter of the family of which our patient is a member, the evidence is positive and clear on her father's side, and circumstantially strong on that of her mother. Her father was a member of the before-mentioned afflicted family. Her mother, though possessed of normal color-sense, had a color-blind brother, and the presumption that she was descended from color-blind stock is allowable. According to many histories of color-blind families, there is a tendency on the part of the mother, descended from color-blind stock, to impress her progeny with the defect of her antecedents, and in the case of our patient's mother this influence must necessarily have been greatly intensified by the congenital color-blindness of her husband. I think that in this way the participation of all the children in the hereditary impression can be explained.

The appearance of so many color-blind females is of no inconsiderable import, inasmuch as it portends deficient color-perception in the males of the rising generation of this family, as shown in two of the sons of our patient.

In reference to the different ideas concerning the

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[1] Text-book, 1892.

[2] Text-book, 1893.

[3] Text-book, 1890.

[4] Archives of Ophthalmology, vol. x, p. 11.

[5] School Document, No. 13, Boston, 1880.

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[1] I have not found a parallel case in the literature at my command.

[2] As far as could be ascertained from members of her family.

transmission of color-blindness, this genealogy only serves to produce confusion. It does not support the inference of Meyer[1] that "color-blindness is transmitted only on the mother's side, though she herself is not affected by it." We have in this history a color-blind female bequeathing the defect to two of her sons. The history, considered as a whole, would seem to conform more to the general statement quoted from Soelberg-Wells, that "the congenital form of color-blindness is frequently hereditary, affecting several generations of the same family; that the hereditary form comes oftener from the mother's side than the father's; that males are affected oftener than females, though in some families only the latter were found color-blind."

I appreciate the fact that this genealogic tree has not been fully developed, and that many interesting facts may be brought out by a fuller study of the family histories. If the further investigation of this subject brings forth fruit, I purpose basing a future paper on the additional facts.

ALCOHOL AND PNEUMONIA.

BY JULIUS POHLMAN, M.D.,
PROFESSOR OF PHYSIOLOGY IN THE UNIVERSITY OF BUFFALO, N. Y.

THE action of alcohol on the different organs of the human body has been investigated so carefully and systematically that it almost seems impossible to add anything new on the subject. Looking over the literature we find abundant evidence of careful study of the question in its bearing upon heart, brain, liver, kidneys, and the digestive tract; but, strange to say, the lungs have apparently escaped attention, although a few straggling notices hinting at the true relation between alcohol and the respiratory organs have been published at different times and in different countries. As early as 1855 Dr. B. Cohen (*Zeitschr. für klin. Medizin*, Breslau, 1855, p. 401) maintained that the abuse of alcoholic drink is a strong predisposing cause of death when the drinker is attacked by pneumonia. Out of fifty-seven such cases treated at the Breslau Hospital, twenty-four died. Another notice confirming this statement is given by Dr. William Osler in a report on pneumonia in the Pennsylvania Hospital. According to this authority, pneumonia is, as a rule, fatal if a drinker is attacked when under the influence of alcohol; if cases of chronic alcoholism are excluded, the death-rate for that disease in the Pennsylvania Hospital, 29 per cent., would be only or 10 per cent. A few reports are on record of autopsies made on children who died after drinking large quantities of strong drink, stating that the lungs were dark and congested, but no experimental evidence has been given as to the action of alcohol in the production of pathologic conditions of the lung-tissue.

In order to determine this question I made a series of experiments during the winters of 1890, 1891, 1892 and 1893, and the results are embodied in this report.

The animals used were dogs, male and female, mongrels of very mixed origin, picked up from the streets by the city dog-catchers. They ranged in weight from fifteen to twenty-five pounds, and were all apparently in good health, if voracious appetites and strong fighting propensities can be accepted as indications of physical well-being. Twelve animals were used during 1890–91, ten the following winter, and nine during the winter of 1892–93.

The experiments were simple. The animal, carefully etherized, received an injection of a quantity of commercial alcohol, varying from one dram to one ounce, into the trachea just below the larynx, by means of a large hypodermic syringe. After the narcosis had passed away the symptoms were noted, from hour to hour first, from day to day later. and post-mortem examinations made after a certain time, varying from half an hour to four weeks, gave evidence of the internal conditions of the respiratory organs.

The general symptoms were invariably the same, differing in severity only according to the quantity of alcohol given and the age, weight, and strength of the animal experimented upon. The terms age and strength are used guardedly, for the temptation is strong to say "idiosyncrasy;" otherwise it is difficult to account for the different effects produced by equal quantities of alcohol upon dogs of the same weight. For instance, two dogs, each weighing twenty-five pounds, were treated with a dose of two drams each, and one died after one hour, and the other after six hours; while two other dogs of twenty-four pounds weight, and two more weighing respectively fifteen and eighteen pounds, received the same quantity, two drams each, and all four survived and were as well as ever after four weeks. One dog, weighing eighteen pounds, died in five minutes after receiving two drams of alcohol, while another, of fifteen pounds weight, took *one ounce*, and recovered.

So, whether there is a similar idiosyncrasy in dogs as there is in men, or whether the differing results were due to age and strength of the animal, is an interesting question open to discussion.

The symptoms in all dogs experimented upon were alike and as follows: difficulty in breathing, increasing with the advance of the inflammation set up in the respiratory passages by the action of the alcohol, until it finally resembled a wheezing noise and called into activity all the accessory respiratory muscles; stethoscopic examination gave evidence not only of the difficulty which the air encountered in trying to force an entrance into the bronchial tubes and air-vesicles, but also of the tumultuous beating of the heart while attempting to drive the blood through the capillaries of the lung. Copious expectoration of a bloody, frothy mucus indicated the progress of the disease.

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[1] Already quoted.

As the animal weakened it usually pressed itself against the wall of the room with the thorax as much as possible resting on the floor, and displayed a constant desire for cold water, probably due to the feverish condition induced by the inflammation. No temperatures were taken, for after three thermometers had been broken by the struggles of the animals the attempt to gain correct information on that point was abandoned.

Post-mortem examinations always showed the lungs dark and congested, solid in some places, so solid indeed that these parts sank when thrown into water.

Cutting into the lung, the air-passages were found to be always filled with bloody frothy mucus; even the animal that died five minutes after the injection presented the same symptoms. The lungs were dark and congested and full of bloody mucus, showing the rapidity of the inflammatory processes and clearly demonstrating how *acutely sensitive the respiratory passages are to the action of alcohol.*

There is probably no danger of meeting contradiction when we define pneumonia as an inflammation of the lung-tissue; whether of bacterial or traumatic origin, of lobar or lobular form, need not concern us here, as long as we are satisfied that these inflammatory processes produce the phenomena observed in the respiratory passages during an attack of the disease.

Alcohol introduced into the lungs of dogs sets up a pneumonia more or less severe. Whether we call it a traumatic pneumonia, or a broncho-pneumonia, or coin a new name for it, will not change the fact.

On microscopic examination of such lung-tissue the air-tubes and vesicles are found to be partially or completely filled with immense numbers of red and white blood-corpuscles and large quantities of mucus, and present the same picture as that obtained from a slide made from the lungs of a child that died from broncho-pneumonia, and although one is from a human being, the other from a dog, the former representing a well-known type of disease, the latter an artificial form, the similarity between the two is certainly striking enough to prove that the pathologic condition of the lung-tissue is the same in both, and that the alcohol has induced inflammatory processes very closely resembling, if not absolutely like, those found in attacks of broncho-pneumonia in human beings.

Admitting then that alcohol *can* produce all the grades of inflammation of the lung-tissue from the mildest to the fatal form, according to the quantity used, we can perhaps understand to some extent why drunkards if attacked by pneumonia will succumb more speedily than the patient of temperate habits.

By virtue of the alcohol coursing with the blood through the lung-capillaries on the one side, and the alcohol exhaled with the breath, be it ever so little, filling the air-vesicles and air-tubes on the other side, the lung-tissue itself, so sensitive to alcohol, stands between two fires, so to speak, and must be in a chronic state of semi-engorgement, of mild inflammation, like the highly-colored nose of the drunkard or the engorged mucous membrane of his stomach.

Certainly such a state of affairs will change the normal condition of the cells of the lung-tissue and reduce their vitality, and in proportion their power of resistance to external influences; and if now a severe, acute form of inflammation, such as pneumonia, is added to the pathologic conditions already existing, the lungs find themselves powerless against the attack of the disease, and the drunkard's death-rate from pneumonia illustrates the time-honored law which says that an organ or organism weakened by previous ills cannot compete with normal organs in fighting the battles against acute diseases in the struggle for existence, and the man of temperate habits, with lungs free from alcoholic inflammation, has from five to seven chances for recovery from pneumonia when the drunkard has only one.

CLINICAL MEMORANDA.

SOME RHINOLOGIC CASES OF INTEREST.

BY WILLIAM MARTIN, M.D.,
OF BRISTOL, PA.

THE object of this paper is merely to take a few cases of interest from my case-book that are in a way unique, if not a little unusual, and present them briefly.

CASE I is one of *angioma of the naso-pharynx.*—The patient, Annie M., aged about forty years, came to my office during the summer of 1893, complaining of a decided obstruction in the nares, compelling her to breathe through the mouth, and also of a feeling of fulness in the upper part of the throat. She had noticed these symptoms for quite a long time, but considered them as due to a catarrhal trouble which she had been aware of for some years. Noticing that the symptoms were becoming more decided, and seeing an occasional discharge of bloody mucus, she considered it time to consult a physician. I could get no history of a decided epistaxis, although the oozing seemed pretty constant.

The symptoms other than these were those of an ordinary hypertrophic rhinitis which were of no diagnostic value. Upon examination I found anteriorly the nasal chambers showing evidence of a mild type of this form of rhinitis, with considerable turbinated hypertrophy toward the posterior part. Upon inspection of the post-nasal space by means of the rhinoscope, the condition of things was immediately apparent.

The object or growth may be described as follows: A fairly-large, rounded tumor, filling pretty completely the right side of the upper pharyngeal space, and of course hiding from view the opening of the Eustachian canal of that side, and extending a little beyond the median line.

The color was red, showing great vascularity. Upon close inspection the tumor was found to pulsate synchronously with the heart-beats. By gentle use of the probe the attachment was determined to be to the posterior turbinated tissue, and of a slender character, as the tumor was movable. Even with gentle manipulation it bled a little, so that I was careful not to persist in my examination. To my mind the diagnosis was quite apparent.

I informed my patient of the character of the trouble and the dangers attendant upon operation, although this has been done successfully. An appointment was made, as she seemed willing to take the risks, but from that time to this she has not come back, so I cannot tell the outcome of her trouble. To me the case was of great interest because of the rarity of occurrence of this form of tumor.

From what I can find by searching my stock of literature the most complete article on the subject is one by Seiler.[1] He mentions a list of rhinologists who have had cases in their practices, and says of them, "but a careful examination of the clinical features of all these cases as reported leaves us but ten in all which were undoubtedly angiomata, and from which number our knowledge of this rare form of intra-nasal neoplasm is derived." These refer particularly to the growth met in the nasal chambers; while this I feel assured was attached within, yet the major portion was in the post-nasal space. Later in his article Seiler refers to the importance of distinguishing this form of tumor from a true hypertrophy of the turbinated tissue, because of decided difference in the result of operative interference. The clinical distinction is in the pulsation, which is always present in true angioma; otherwise the two may appear very much alike. The other growths to differentiate between are those presenting angiomatous features, such as telangiectatic polypus or angio-sarcoma. The same pulsating condition is the distinguishing feature here also. It is recognized that operative interference is dangerous and has proved fatal, yet it is important in some cases to remove the growth. When this is done, the preferable way is by the cold-wire ècraseur, and the manipulation must be very gentle and carefully slow.

Seiler prefers to allow the excised tissue to remain *in situ*, undisturbed for from twenty-four to forty-eight hours before removal. He mentions also that partial excision is often followed by complete disappearance through post-operative shrinkage. If this description establishes my diagnosis as correct, this will add one more case to the now very small list of angiomata of the nasal cavities.

CASE II. *Foreign body in the nose.*—The interest of this case is not because of any rarity of occurrence, but from the fact that the condition of the nasal chamber simulated the atrophic form of rhinitis, and also in the fact that it was mistaken for this by another physician.

The patient, Beatrice C., a child of two-and-a-half years of age, showed evidence of a nasal obstruction, with an excessive amount of offensive discharge that seemed to increase in amount and character. This gave the impression to the parents of an ozena, and it was for this trouble that they consulted me. The condition was first noticed a year previously, the principal symptoms being apparently pain, and subsequently obstruction.

Upon being questioned, the mother recollected the child playing with shoe-buttons at about that time, but had overlooked the matter. After cleansing the naris with a warm alkaline antiseptic spray, I could feel with a probe a resisting object that gave the impression of necrosed cartilage. Upon further examination under chloroform, as this was necessary, I determined the object to be a shoe-button tightly lodged in the upper sinus, rather posteriorly, and only after bringing to bear considerable force was it dislodged. It proved to be a shoe-button apparently swollen and porous, which fact, no doubt, accounted for the sensation of necrosed cartilage given by the probe. Following the extraction there was considerable hemorrhage and flow of offensive muco-pus. The cavity was thoroughly cleansed, and a bland alkaline antiseptic spray ordered. Healing was natural, and, as far as I can learn, there have been no subsequent nasal symptoms, and the child is growing nicely and seems well. I may say before leaving this case that the child was seemingly in poor health and growing worse gradually, and, as there is a tuberculous family history, the parents became quite alarmed.

CASE III. *Deviation of the septum.*—Herbert ——, aged about twenty-six, a civil engineer, has complained for some years of entire closure of one nostril. He was told by a physician of the town in which he lived that the case was one of polypoid growth, and an operation was talked of. Before this was decided upon he was persuaded by one of his relatives to consult me about it. Upon examination the appearance was as follows: Anteriorly the right side was a large cavity with decided turbinated hypertrophy, no doubt from doing double duty in the performance of respiration. The left was no longer a cavity, being filled entirely by the decidedly deviated septum, which was united to the hypertrophied turbinated tissue, and to such an extent that a small probe could not be introduced. The septum was deflected from above downward and, as well, from the anterior to the posterior portion, making an angle that seemed from the right side very acute, but from the left less so, because of the cartilaginous thickening. The man expressed a desire to receive treatment; so a preliminary course of local applications was instituted, and these were followed by the septal operation. This was done very much after the usual manner, the first step being to make a way through the turbinated tissue with the galvano-cautery, sufficiently large to admit the septal punch and other necessary instruments.

Following the straightening of the septum, the turbinates on both sides were thoroughly cauterized, and the parts cleansed and dressed.

The only means used to hold the septum in place was a wad of cotton packed snugly, and changed sufficiently so as not to become foul. A 10 per cent. solution of cocain was all that was required for anesthesia.

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[1] System of Diseases of Ear, Nose, and Throat, vol. ii.

At present writing, almost nine months since the operation, the septum seems strong and in proper position.

While this condition of the septum is not of infrequent occurrence, it certainly is of interest, because of its frequency, and shows that care must be exercised in the examination of the nasal cavities, not only to establish a proper diagnosis, but also to enable one to extend the proper kind of relief.

CASE IV. *Split septum.*—This patient, George A., a mechanical engineer, came to my office with a history of having been thrown forcibly from his bicycle, striking his head and face, the latter receiving the force of the fall, especially the nose, which soon became very much swollen, while the breathing was entirely obstructed. After about a week's suffering, being absent from home at the time of the accident, he came to my office.

Upon examination I found the condition as follows: Externally, the nose was very much swollen, and internally, both the cavities were occluded. Examining more carefully, the occlusion was found to be due to a separation of the two plates of the cartilaginous septum with an exudate filling the intervening space, and giving the whole the appearance of bagging. The probe would produce fluctuation, and by some force the plates could be partially approximated. The turbinates were normal, so that there was no doubt about the diagnosis.

The treatment consisted in pressure over the parts, to approximate the plates, and local remedies to allay the inflammation and to promote absorption of the exudate. These were employed daily for a couple of weeks, and then occasionally. The exudate was absorbed, and no doubt union between the plates must have taken place, for when the treatment was discontinued the septum seemed almost normal, except for a slight thickening, which may in time disappear.

This form of accident is very unusual if not rare, as a separation of the plates could only be brought about by direct force against the bridge of the nose, and even with such a force it does not always result. The literature on this subject is scant, as far as I can find. Mention is made by Seiler[1] of this condition, but it is treated very briefly. This refers only to the splitting by traumatism, as it is possible for this to happen as a pathologic condition.

CASE V. *Angio-neurotic edema.*—Emma C., aged about twenty-eight years, came to my office complaining of an ordinary hypertrophic rhinitis, for which she was treated in the usual manner. The catarrhal inflammation was gradually improving, and everything seemed satisfactory, when one morning, to her alarm, she noticed a puffing of the tissue under the left eye. This swelling extended rapidly, and in a short time the whole side of the face was swollen, closing the eye tightly. There were no subjective symptoms other than a feeling of tightness and awkwardness of the parts, with a slight burning sensation. Of course, vision in the one eye was suspended temporarily, which annoyed her very much. She could not account for her condition in any other way than, as she expressed it, "the catarrh has gone to my eye." The condition was recognized and an explanation attempted, but owing to ignorance on her part, combined with a nature rather of a melancholy character, the impression could not be dislodged from her mind, and fearing that the swelling might be driven to other parts she discontinued the treatment; so I lost sight of the case, although not until the swelling had subsided, which was in about five days. The only treatment for this condition consisted of frequent applications of hot water to the swollen parts.

While this case does not strictly come under the heading of this paper, it is connected with the subject, inasmuch as it occurred in one of the patients under treatment for a nasal condition, and was probably due to some excitation of the nasal nerve-terminals in a neurotic patient, from the use of the applicator. It certainly is of interest in a general way, as the present knowledge of this condition is not excessive and the number of cases reported is not large, while the condition is not a rare one. Probably the time will come when we shall understand the subject more thoroughly, and until that time each case reported must be of some interest.

SOME ADDITIONAL EXPERIENCES WITH BEHRING'S DIPHTHERIA-ANTITOXIN AND SOME REMARKS ON THE USE OF LOEFFLER'S TOLUOL-SOLUTION.

BY EDWIN J. KUH, M.D.,
OF CHICAGO, ILL.

IN the *Journal of the American Medical Association* of December 1, 1894, I published the following brief report of a seemingly promising case of laryngeal diphtheria that terminated fatally, however, in spite of the reasonably prompt injection of the antitoxin:

Freda H., a robust girl, aged seven years, complained of hoarseness on November 6th, and remained indoors without symptoms of fever until November 11th. On that day she took to her bed, and Dr. F. W. Mercer saw her for the first time. On the same afternoon I saw her in consultation with Dr. Mercer. During the the day the temperature had ranged at slightly over 102°. The fauces *were entirely normal*, with the exception of a small, white, loose deposit on both tonsils, which was easily brushed away with cotton mounted on a probe. The child was hoarse, and the larynx somewhat stenotic. There was no retraction of the chest upon inspiration. Bronchitis existed in the larger tubes. Examination of the larynx was very unsatisfactory, because of an unusually depressed epiglottis and the child's intolerance of laryngoscopic examination.

The next morning, November 12th, the child coughed up a piece of membrane two inches in length, one-half an inch in width, and one millimeter in thickness. Laryngeal respiration was but slightly improved, and shortly after became very difficult. The temperature was about as before, but the pulse-rate became as high as 165. I saw her the same afternoon with Dr. Mercer, and injected ten cubic centimeters of Behring's antitoxin No. 2. A few hours afterward Dr. W. K. Jaques performed intubation. Cultures taken from the larynx showed the presence of Loeffler's bacilli.

On the morning of November 13th the temperature reached 104.5°, the pulse-rate was not lower, and the lungs were filled with fine crepitant râles.

This rapid inception of broncho-pneumonia led to a fatal issue at midnight of the same day. We could not observe that the injection of the antitoxin had made any impression whatsoever on the pulse or temperature of the child.

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[1] System of Diseases of the Ear, Nose, and Throat, vol. ii.

This unfortunate case must, however, not be considered as evidence against the efficacy of Behring's remedy, as the result was evidently clouded by the complication. The child did not die of diphtheria but of broncho-pneumonia.

Since then my experience with the remedy has been more favorable.

Eleanor B., aged five years, daughter of Dr. B., was visited December 10th by a cousin who had had diphtheria, but from whose throat the membrane had disappeared eighteen days previously, and cultures from whose throat had finally been pronounced free from Loeffler's bacilli. On December 16th the child, who was visiting relatives in the suburbs with her brother, aged eighteen months, became ill with diphtheria. She was brought to the city the following day, and was seen by me in consultation with Dr. W. S. Christopher. We found moderate swelling of the submaxillary lymph-glands, patches on both tonsils and on both sides of the posterior pharyngeal wall extending upward toward the post-nasal space. The systemic infection was slight, and the temperature-maximum did not exceed 102°. Cultures gave an almost pure growth of Loeffler's bacilli. I injected 600 antitoxin normal units on the 17th. The membranes began to exfoliate on the following day, and disappeared entirely within forty-eight hours after the injection. Pulse and temperature became normal on the 18th. Ten days after the injection the child developed an extensive erythema. During the short course of the disease it was deemed expedient (with all due apologies to Prof. Behring) to treat the throat locally with Loeffler's toluol-solution.

Three days after my first visit Mrs. B., the child's mother, complained of excessive prostration and some tenderness in the throat. The right tonsil, concealed in the palatal folds, was found covered with false membrane, from which a fragment was easily removed. From this piece of membrane I received the most exquisite pure culture of Loeffler's bacilli I have ever grown from the throat. An application of Loeffler's solution was immediately thoroughly made to the surface of the diphtheric tonsil, and within a few hours the temperature declined from 99.5° to normal. On the following day the temperature rose to a maximum of 100.4°, and more membranous patches were seen farther to the left on the posterior pharyngeal wall. They were treated every three hours with applications of toluol, and the antitoxin was reserved for an aggravation of the disease, which, however, did not occur, as within forty-eight hours the patches disappeared entirely.

December 21st the younger child of Dr. B., aged eighteen months, developed a temperature of 101°. The child had been kept with the relatives (already mentioned) in the suburbs for purposes of isolation, but was now brought to the city because it was feared that he also was developing diphtheria. The appearance of the throat on the 21st certainly gave the most cogent reasons for that belief; for though no membrane had yet formed we were prepared to find it there the following morning. Unfortunately, no cultures could be obtained from the child's throat, because he had a knack of filling his mouth and throat with saliva in order to ward off attempts at examination. He received a preventive injection of the antitoxin, after which on the following day all malaise, from which the child had been suffering on and off for a week, disappeared. In this connection it might be mentioned that in the family in which the children lived before being transferred to the city a child, aged fourteen years, developed diphtheria on December 24th, probably traceable to contact with Dr. B.'s children.

Ursula S., aged fourteen years, was seen December 19th through the courtesy of Dr. J. W. Dal. She, as well as the numerous other children of the family, had been suffering from hoarseness for about a week. Her condition on the 19th of December was such as we see in laryngeal diphtheria. Both tonsils were covered with patches which had not yet become confluent, and on each side of the pharyngeal wall a membranous deposit extended downward. The child was quite croupy, and the laryngeal affection such as to suggest the probable necessity of intubation within twenty-four hours. The culture-tube and the microscope confirmed the diagnosis of Loeffler's diphtheria. In this case there was a preponderance of other micro-organisms in the culture, among which a capsule-diplococcus was conspicuous. I injected 1000 antitoxin normal units and Dr. Dal kindly made regular applications of toluol to the tonsils and pharynx. The membrane loosened within the next twenty-four hours, and the constitutional symptoms, which had not been severe, promptly improved. Two days after the injection the patches had almost disappeared, although the hoarseness still persisted to some extent. Toluol was then gradually discontinued and a spray of corrosive sublimate substituted. On the afternoon of December 24th the child suddenly became worse, and on Christmas day there were again two deposits on the pharynx, with a return of the threatening laryngeal symptoms and considerable involvement of the submaxillary glands. I again injected the antitoxin (10 cubic centimeters of Behring's No. 1 solution), with equally prompt response. The child continued to improve, and further recovery was uneventful with the exception of an urticaria-rash, which subsided in a couple of days.

Sydney R., aged thirteen years, spent a week in a house at Terre Haute, Indiana, in which diphtheria had occurred six months previously. He returned to Chicago December 31st, complaining of pain in the throat and general lassitude. I saw him the same night, and found a suspicious patch on the right tonsil, which I brushed thoroughly with Loeffler's toluol-alcohol-iron solution. The next morning the membranous deposit extended over most of the pharyngeal wall and to the left tonsil. The membrane on the right tonsil, to which toluol had been applied the previous night, had mostly disappeared. I injected nine cubic centimeters of Behring's antitoxin No. 1, and ordered the toluol-applications to be continued. Within the next twelve hours there was a continuous increase of the exudate, with extension slightly above the palatal arch; the temperature was 102.5°, the pulse 120, and there was intense somnolence. At that time the impression of the case was such as under ordinary circumstances would have offered a very grave prognosis. On the morning of January 2d, however, two-thirds of the membrane had come away; the temperature was elevated but slightly above normal, and the boy was bright and cheerful. On January 6th all traces of pseudomembrane had disappeared. In this case the diagnosis of Loeffler's diphtheria was verified in the usual way. The boy's mother, who had been seriously exposed before I saw him, had a rise of temperature on January 2d, due to an inflamed throat, but, possibly owing to applications of toluol, did not contract the disease.

It seems to me rather important to mention that after the application of Loeffler's toluol-solution, scattered, filmy, and somewhat tenacious grayish deposits appear in the throat, which are not diphtheric, but due to some chemic action of toluol on the secretions and epithelium of the throat. It is necessary to guard against the error of interpreting these chemic deposits as new invasions of the disease.

Toluol seems to me destined to become a very important auxiliary treatment in conjunction with the antitoxin in the mixed infections of diphtheria. In the pseudodiphtheria of scarlet fever it will probably be classed as a supreme local remedy. Unfortunately its pungent qualities will exclude it from application in nasal and pharyngeal invasion of the disease. The early diagnosis and treatment which the future will exact from every conscientious physician will naturally be a safeguard against infections beyond the reach of a combination of antitoxin and toluol.

There has until now been no local abortive treatment of acute follicular tonsillitis, the claims made for guaiacol to the contrary notwithstanding. Loeffler's toluol-solution has aborted all of the cases of acute follicular tonsillitis within my notice during the past weeks, two or three of these being particularly severe.

The introduction of this remedy will naturally lose in éclat by being overshadowed by the antitoxin. It is fortunate that we have become so suddenly doubly enriched; for after the smoke has cleared away we shall, I believe, realize that not every case of diphtheria should be treated with injections of the antitoxin, which are not so harmless as they were at first supposed to be. Each of the two remedies will find its sphere, and frequently they will be used in combination.

I am indebted to my brother, Dr. Sydney Kuh, for his kind assistance in establishing the microscopic diagnosis in these cases.

A CASE OF ENTERIC FEVER OCCURRING IN ADVANCED PREGNANCY.

SERVICE OF S. S. STRYHER, M.D.,
PRESBYTERIAN HOSPITAL, PHILADELPHIA.

[Reported by P. M. ASHBURN, M.D., Resident Physician.]

THE following case is interesting as showing the course of typhoid fever during pregnancy, some of the difficulties that may attend its treatment, and the usual result.

The patient was a young white woman, twenty-two years of age, who was married and had had one child, which is living and healthy. Her family history is good, and she had never been sick before. She was brought to the hospital after two weeks' illness, with fever, diarrhea, and cough, from one of a row of houses from which we had removed another patient with the same disease about two weeks previously. All the people in this row obtained their drinking-water from a common well, and all the houses had privy-vaults close at hand.

The patient was admitted August 6, 1894, and I will first quote the notes made at the bedside during her sickness.

On admission the patient complained of fever, cough, and diarrhea, and said she was about seven-and-a-half months pregnant. Her temperature was 104.2°, the pulse 152, the respiration 52. She was of medium size, and weighed about 125 pounds. The skin and mucous membranes were of good color, the cheeks flushed, the pupils normal and reacting to light and distance. The tongue was dry and coated with a brownish-white crust. The pulse was rapid, rather weak, of low tension, and somewhat dicrotic.

The chest was well formed, the lower part wide from abdominal distention. The respiratory sounds were harsh, especially posteriorly. Examination of the lungs was otherwise negative. The heart-sounds were rapid but of good strength.

Hepatic dulness extended from the sixth rib to the costal margin; splenic dulness from the eighth to the tenth rib. The abdomen was large and bulged symmetrically; the linea albicantes were abundant. There was dulness on percussion in the umbilical and hypogastric regions, but elsewhere the note was clear. The uterus could be outlined, with its fundus at about the level of the umbilicus. Fetal movements could be felt. Fetal heart-sounds were heard in the right lower segment, the placental souffle on the left. The patient was being tubbed, and required from two to four baths daily. Her great complaint was of cough.

On August 11th the patient had at various times complained of severe abdominal pain, feeling like uterine cramp. It was on this evening severe while the patient was in the tub. On August 12th a systolic murmur was heard at the base and apex of the heart. On August 14th the patient had had twenty-one tub-baths. The temperature generally fell to 100° after a tub. The pulse became very rapid and feeble; after a tub the night before it was 204. Tubs were not now required as frequently as a few days previously. The patient vomited her medicine and milk, the vomiting being excited by cough. She still complained of cramps in the abdomen. She had been delirious at times. The face was now clearer than a few days before. The tongue was still coated and there were sordes on the teeth. The respiratory sounds were harsh and abundant dry râles were heard. The heart-sounds were rapid, and a systolic murmur was present at the apex. The abdomen was larger than at the time of the previous note. No rose-spots had been seen.

On August 20th the woman had been doing fairly well, the pulse and respiration being stronger and less rapid. The patient had complained a good deal of abdominal pains, but they were in a measure controlled by morphin. On the previous morning she had complained of greater pain, and at 9.10 A.M. her child was rapidly born. There was no tear and little bleeding. The placenta came away without trouble. The child lived for about half an hour. It was a male and measured 37.4 cm. in length and weighed 1030 grams. Its nails were well developed. The placenta was rather small and came away intact. Into one side of it there had been a hemorrhage, involving a strip about one inch wide by five inches long.

The patient's temperature remained high after the labor, and she was sponged several times with apparently little effect. The night before the temperature still continued high, and she was tubbed for twenty minutes, after which the temperature fell to 99°. The temperature continued to fall slightly until morning, and at 9.30 A.M. was 95.4°. The patient perspired profusely at 4 A.M. There was now no pain in the abdomen. The pulse was somewhat rapid but of good strength and volume. The tongue was dry. The heart-sounds were fairly strong; there was systolic roughening. The abdomen was moderately distended and tympanitic all over. The lochial discharge was very slight. The patient complained of the feet being painful and tender; the legs were slightly tender; the feet were white and very slightly swollen; the slightest pressure on them caused pain.

On August 23d, over the upper portion of the back and on the right shoulder was noticed a thick-set eruption of small, salmon-colored papules, many of them surmounted by very small vesicles. The eruption itched, but was now fading. After the last note the temperature remained subnormal, at one time being 94° by the mouth and not registering in the axilla. The tongue was dry, cracked, denuded in patches. The breath-sounds were slightly blowing at the right apex anteriorly, elsewhere somewhat harsh. There was roughening of the systole over the base and apex. The abdomen was only moderately distended, tympanitic, and tender in the epigastrium. The pain in the toes and feet had almost disappeared.

September 6th, the temperature had been normal since the last note. The patient was now being propped up in bed daily. The facial expression was good, the tongue clean and moist, the pulse accelerated but of good strength and volume, the heart-sounds clear and soft, the abdomen not distended or painful, and there was no vaginal discharge. The rash on the back and shoulders was desquamating and fading.

From this time on the patient had no trouble, and was finally discharged cured.

The treatment of this case was largely symptomatic. The ever-present uterine pains warned against too greatly shocking the patient by cold baths, while the high temperature, at almost all times above 104° in the axilla, being uninfluenced by sponging and small doses of antipyretics, necessitated something of the kind. She was therefore tubbed when the temperature reached 103°, being placed in water at 80°, and that gradually reduced to 70°, and kept there for from twenty to thirty minutes. The temperature would thus be reduced to about 100°. The rapid and weak pulse and respiration, occasionally rising to 200 and 55 respectively, and nearly constantly remaining at from 140 to 190 and 36 to 50, called for stimulation, while the fear of their action on the uterus forbade strychnin and kindred preparations, and whiskey, which was vomited as soon as taken by the mouth, could not be much used by enema. That element was finally partially controlled by the hypodermic use of digitalis and morphin in small doses and small and frequent dosage of champagne by the mouth. The irritability and crowding of the stomach also made it impossible for any food but very small quantities of peptonized milk to be retained, and that was very often rejected.

Finally, when it was hoped that the temperature might soon subside, it prevailed against the treatment, and hemorrhage into the placenta, with miscarriage, resulted.

Then followed another peculiar feature, in the subsidence of the fever by crisis twenty-four hours after the miscarriage, and its continuance for four days between 94° and 98°, by the mouth, and then gradually rising to normal.

The skin-eruption was also not uninteresting. The systolic roughening was interesting if not unusual. The urine contained albumin in small amount for a time, and thus caused slight anxiety, but no symptoms of eclampsia were manifested.

AN EXPLOSION OF TUBERCULOSIS, WITH A PECULIAR TUBERCULOUS LYMPHANGITIS, IN A BOY FIVE YEARS OLD.

BY BAYARD HOLMES, B.S., M.D.,
PROFESSOR OF SURGERY IN THE COLLEGE OF PHYSICIANS AND SURGEONS OF CHICAGO.

IN January, 1888, a boy five-and-a-half years old was brought to me by a gentleman seventy-two years of age and a lady about fifty. I supposed that he was a grandchild, but was assured that I had before me the little fellow's father and mother. They gave me the following history. In the preceding June the boy had fallen upon a wood-pile and injured his left knee. During the succeeding month or two he had complained of lameness, which was then followed by a slight swelling over the left patella. Two months later numerous "swellings" appeared in various parts of the body. One of these swellings broke and discharged a thin pus at the outer border of the left gluteus maximus. The swelling over the patella opened a little later. The boy had run down all the time. Upon examination I found nine unopened tumors and two discharging tuberculous sinuses. There was an evident tuberculous inflammation of the sheath of the extensor tendons of the left toes; there was evident tuberculous disease between the astragalus and calcaneum of the right foot; there was a large superficial tuberculous lymphangitis in the left calf, and two similar accumulations upon the internal and upon the external border of the left quadriceps extensor femoris. There was one similar accumulation, about eight inches long, which seemed to be within the sheath of the semi-membranosus of the right leg. There was a large liquefied tuberculous adenitis in the right axilla, and there was a small tuberculous lymphangitis along the border of the right biceps. Each of these tumors was long and indistinctly fluctuating. The two open tumors were discharging pus, which was certainly tuberculous, and their exposed surfaces were covered with tuberculous granulations.

After proper preparation an operation was undertaken. The astragalo-calcaneal joint was first carefully opened and curetted. The extensor tendons of the left foot were then exposed and their sheaths trimmed out with scissors. These wounds were closed. The lymph-space abscesses were then carefully opened, trimmed out, and packed with iodoform-gauze. Last of all, the open abscesses were cleaned and curetted and treated by the open method of iodoform-gauze dressings. The operation required a little more than half an hour, and the patient recovered from the anesthetic promptly. During the following two months the larger abscesses were scraped out three times, and all of them closed except four. Two new abscesses appeared in the neighborhood of the old ones, and these were opened and curetted. The patient lost strength very much during the first six weeks after the primary operation, and the weakness was exhibited by a curvature of the spine, which for some time promised tuberculous disease of the vertebræ. Nothing of this kind, however, occurred; and by good feeding and careful nursing the patient was completely restored. All the wounds were healed within six months after the primary operation. The patient is now (1894) a strong healthy boy, over-sized rather than under-sized, with no appearance of a return of the disease. The family has been warned that at between fourteen and eighteen years of age another explosion may be expected. The peritoneal cavities of two guinea-pigs were opened and a gram or two of the granulations from an unopened abscess were introduced on the sharp spoon. These guinea-pigs were examined after death and showed, one a large tuberculous peritoneal abscess with general tuberculosis, and the other a general miliary tuberculosis. The first was killed five weeks and the second seven weeks after inoculation.

In investigating the origin of this tuberculosis, examination was made of the cows from which the boy had been fed during the previous two years. This herd consisted of three "scrub" cows, with not the slightest sign of tuberculous disease. The udders were free from any lumps, nor could any history of sickness in the herd be obtained. The household was carefully examined, and not the slightest trace either of hereditary or acquired tuberculosis in any member of the family or in any servant could be elicited. Among the visitors, only one could be distrusted. This was a little girl, twelve years old, that had suffered a year before from scarlet fever, followed by suppurative disease of the middle ear. The ear was said to have been discharging during a six weeks' visit to the house, which occurred the spring previous to the onset of the disease in the little boy.

A year-and-a-half after the boy had entirely recovered the father consulted me in regard to an acute orchitis in the right testicle. This gave me a history that I had not heard before. Fifteen years before he had had an orchitis that came on rather slowly, never being particularly acute, and resulting in a round, spongy tumor at the side of the testicle. This tumor was punctured several times by the physicians who attended him, without the removal of anything except a little blood and a show of cheesy matter. For a year-and-a-half after the first appearance of the disease, the tumor remained the same size, giving rise to little pain but to much uneasiness. No exact diagnosis was given at the time, although the most prominent surgeons in Chicago were consulted. At last the tumor nearly disappeared, but remained as a hard lump at the lower end and inner side of the testicle. Upon various occasions it showed a disposition to enlarge and become slightly painful. When examined by me the right testicle was found distinctly atrophied, being hardly two-thirds the diameter of the left testicle. The head of the epididymis was as large as a walnut; it was hard and firm, except in one small place, where it appeared to fluctuate. A hypodermic needle was introduced into this fluctuating portion, and a fine granular pus was removed, which upon microscopic examination proved to be distinctly tuberculous. This small abscess was treated with iodin and iodoform injections, with repeated aspiration of the pus. A moderate degree of reaction followed, and subsequently the tumor returned to its dormant condition. The father died suddenly in his chair a year after this treatment. He was then seventy-four years old, and an otherwise apparently strong and healthy man.

A CASE OF TRIPLE MAJOR INJURIES.

Service of W. S. HUSELTON, M.D.,
SURGEON TO THE ALLEGHENY GENERAL HOSPITAL.

[Reported by Joseph C. Ohail, A.M., M.D., Resident Physician.]

On April 19, 1894, Phillip B., aged sixteen, employed in an iron-factory, was brought to the Allegheny General Hospital, suffering from a fracture of the left femur at its middle third, a fracture of the right leg near to and probably involving the knee-joint, and a terribly lacerated and broken left arm. From the middle of the forearm down nothing remained. The humerus was broken in several places, the seat of the upper fracture being at the junction of the upper and middle thirds. The upper fragment was projecting, and the skin and fascia were completely torn off up to the shoulder, presenting an appearance like that of a coat with its sleeve torn out. The man had been standing on a platform which ran along just beneath a hanging shaft, when in some way a belt which had been broken became wrapped around his arm. On the belt tightening he was caught and revolved about the shafting, which was eighteen inches from the ceiling. His legs were broken by striking the ceiling. He was released only when his forearm gave way.

The brachial artery could be seen pulsating along the greater part of its course. There was but little hemorrhage. The axillary artery was first ligated just below the subscapular. One end of the ligature was left to project beyond the line of the suture. The humerus was then disarticulated, and as much as possible of the muscular tissue about the shoulder was removed, so that the skin might cover the wound. Even after doing this there was much tension on some of the sutures. It is to be remembered that not a particle of skin was cut away.

The right leg was put on a double-inclined plane, and extension was applied to the left leg.

For the first three weeks the temperature ranged between 99° and 100°. The highest during the history was 100.8°.

The left leg was kept in extension for thirty-seven days. Union was complete. The right leg was kept on the double-inclined plane for fifteen days, then twelve days in an ordinary fracture-box, and then fourteen days in a plaster cast. Union was good, with no deformity.

The stitches of the amputation-wound were removed on the tenth day, and the ligature on the axillary artery came away. The wound had healed nicely save at two points where the tension had been too great. These granulated up quickly. Ten days later it was dressed, and fluctuation was noticed in the anterior flap. The cavity was punctured, and two drams of a puriform material escaped. This was not pus, but broken-down tissue which had lost its vitality through the severe contusion of the part. The wound healed within a week.

On June 6th the patient sat up out of bed. A week later he stood on his feet and walked with assistance. On July 1st he was discharged. He then walked without cane or crutch, and limped but slightly. He was seen three months later. He had perfect motion in the right knee, and all other movements were normal. He walked with a barely perceptible halt.

MEDICAL PROGRESS.

Rupture of the Uterus from Dystocia Due to Congenital Displacement of a Kidney.—Albers Schönberg (*Centralblatt für Gynäkologie*, 1894, No. 48, p. 1223) has reported the case of a tertipara whose first labor was difficult and terminated in the birth of a still child at term. The second labor was likewise difficult and protracted, but the child survived. In the third, in which the child presented by the vertex and occupied the second position, the pains suddenly ceased after having persisted for some hours, and vomiting, with symptoms of collapse, set in. The child was extracted with artificial aid, and upon efforts to remove the placenta it was found that the uterus had been ruptured. After delivery, however, the viscus contracted well, and there was no hemorrhage through the vagina. The child was a female of normal size, and weighed about seven pounds. For a time the woman appeared to do well, and a symptomatic course of treatment was adopted. In the course of twenty-four hours, however, vomiting recurred, grew progressively worse, and finally stercoraceous. There was complaint of abdominal pain, with increased tension, and the pulse became bad and rapid. On the fifth day, with a view to the relief of a possible ileus, celiotomy was undertaken, and the abdominal cavity was found to contain a few ounces of free blood. The intestinal serosa was reddened and inflamed; the intestines were distended and adherent. No source of obstruction was found, and the symptoms were ascribed to a condition of paralytic ileus. The abdomen was closed, a loop of intestine being attached to the upper angle of the wound for the purpose of a preternatural anus. The condition of the patient failed to improve, and death speedily followed the operation.

Upon post-mortem examination a cavity was found at the point where the peritoneum is reflected upon the anterior wall of the uterus, containing clotted blood and fragments of disintregrated tissue, and communicating above with the body of the uterus and below with the anterior vaginal vault. Further examination showed that this cavity resulted from a laceration three inches long in the anterior wall of the cervix uteri. The left kidney was found in the concavity of the sacrum, its upper pole lying immediately in front of the promontory and the hilus directed toward the right. The renal artery arose just above the bifurcation of the aorta, and the renal vein emptied into the vena cava in a corresponding situation.

Obstruction of the Duodenum by a Gallstone.—Schüle (*Berliner klinische Wochenschrift*, 1894, No. 45, p. 1015) has reported the case of a woman, thirty-five years old, who for three years had suffered with moderate pain in the right hypochondrium, recurring irregularly, and not associated with jaundice. Four years before coming under observation the patient had vomited a half-pint of blood without preceding or subsequent gastric disturbances. The stomach was distended and somewhat displaced downward. With regulation of the diet and daily irrigation of the stomach the general condition somewhat improved, but vomiting recurred, and the patient was suddenly seized with collapse. On examination, only distention of the stomach was found, but the vomiting persisted despite repeated lavage. The ejected matters contained bile but were not fecal. Symptoms of coma appeared, although the urine contained neither albumin, nor sugar, nor acetone. The quantity of urine was, however, diminished. Intestinal peristalsis was not appreciable, and the conjunctivæ had become slightly icterode. The administration of nutritive enemata and the practice of enteroclysis were followed by the excretion of an increased quantity of urine. The treatment was thus continued until finally a spherical gallstone, 2.7 cm. long, and 9 cm. in circumference and weighing 4.5 grams was extruded from the bowel. Thereafter consciousness returned, and all of the threatening symptoms disappeared.

Two Cases of Cerebral Syphiloma.—At a recent meeting of the New York Neurological Society, Dr. Nammack presented two cases of syphiloma of the brain. The first occurred in a cloth-examiner, aged thirty-four, who six weeks after contracting a chancre suddenly became unconscious, and had no recollection of what transpired during the succeeding forty days. Following this there was right-sided hemiplegia, which confined the man to bed for three months. As soon as the initial lesion was discovered the patient was put on specific treatment, and this was vigorously continued for a long time. About six weeks after the treatment was discontinued the patient developed severe occipital headache and bi-temporal hemianopsia, with ataxia and exaggeration of the knee-jerks. Under specific treatment these symptoms almost entirely disappeared. It is believed that the lesion was probably a gumma situated in the substance of the optic chiasm.

The second patient was a man, forty-four years old, who complained of dizziness, bilateral occipital headache, tinnitus, absolute deafness of the left ear, and diplopia. He also had the characteristic cerebellar gait. The history of syphilis in this case was rather obscure, but under specific treatment the man's symptoms almost entirely disappeared. The diagnosis was gumma in the cerebellar region.

New Operation for the Removal of Myofibromata of the Uterus.—At a recent meeting of the Chicago Gynecological Society Senn described a new method of removing myofibromata of the uterus by celio-hysterectomy. After ligating the broad ligaments in the usual way a circular incision is made around the uterus, dividing the peritoneum and subperitoneal fascia; then the lower segment of the uterus is deperitonized to a sufficient extent to make a cuff, which is sutured to the lower angle of the wound, uniting peritoneum to peritoneum, after which the uterine arteries are tied separately; no use is made of elastic constriction. After the uterus has been brought forward into the lower angle of the incision the upper part of the wound is closed by suturing, which renders the part of the uterus to be removed extraperitoneal before the amputation is effected. If the cervix is left after the amputation of the uterus, the cervical canal is closed by one row of buried catgut sutures. Hemorrhage after ligation of the uterine arteries is very moderate, and is consequently very readily controlled by a number of rows of buried sutures, for which chromicised catgut is invariably used. This leaves a funnel-shaped depression in which rests the cervical stump of the uterus. About twenty-four hours after the operation the gauze is removed and the secondary sutures tied, after which, as a rule, primary union of the wound takes place.

The Influence of Sunlight on Cultures of the Tetanus-bacillus.—As the result of an experimental investigation, WESBROOK (*Journal of Pathology and Bacteriology*, vol. iii, p. 70) was able to confirm previous observations that oxygen is a necessary factor in the destruction of bacteria by light; besides, an actual diminution of the contained air was shown to take place during the time of exposure of cultures in air. The larger the surface exposed the more rapid the destruction when equal volumes are exposed. Existing data do not suffice to explain in what this process consists. Cultures of tetanus-bacilli are completely destroyed on prolonged exposure to the sun in air, though it is possible to stop at a point at which the pathogenesis vanishes while life still remains in the spores. It appeared as if those spores that survived the sun's action are capable of producing, on reinoculation into fresh tubes, quite as virulent cultures as before, but the pathogenesis seems to be increased. It was possible to inject into mice living tetanus-spores without inducing any symptoms. Further research must show whether this result is due to the smallness of the dose, to a temporary attenuation, or to the harmlessness of the spores in the absence of the poison.

THERAPEUTIC NOTES.

A Case of Splenic Leukemia Treated with Bone-marrow.—LAWRIE (*British Medical Journal*, No. 1770, p. 1238) has reported the case of a peevish, miserable child, seventeen months old, that came under observation in an advanced state of emaciation, and with a greatly-distended abdomen. The appetite was entirely lost, and sickness and diarrhea were constant and severe. The skin was harsh and dry, and, with the mucous membranes, extremely pallid. Respiration was rapid and shallow, and the pulse about 120. There was a daily rise of temperature, followed by exhausting perspiration. The urine was free from albumin and sugar. The spleen was immensely enlarged, occupying two-thirds of the abdominal cavity. The anterior edge was easily defined, and extended from the ensiform cartilage to the middle of Poupart's ligament on the left side, and passing well to the right of the umbilicus. The surface was smooth and free from tenderness. The peritoneal cavity contained a slight amount of fluid. Inquiry failed to elicit a history of syphilis or of malaria. A teaspoonful of bone-marrow twice daily was prescribed, in conjunction with appropriate nourishment. Although the case seemed somewhat hopeless, improvement rapidly set in, appetite soon returned, diarrhea ceased, and fever disappeared. The skin and mucous membranes assumed a healthy color, and the child gained in weight. The most striking alteration was the steady diminution in the size of the spleen, which could only be felt in its normal position, under the ribs. After four months of treatment the patient was restored to health and strength.

For Bronchitis.—

℞.—Phenol salicylate	ʒj.
Terpin hydrate	ʒj.
Codein sulphate	gr. ij.—M.

Make twenty capsules or pills.
Dose.—One every four hours.

℞.—Ammonium salicylate . . .	℈ij.
Ammonium carbonate . . .	gr. xxiv.
Ammonium chlorid . . .	℈iv.
Fluid extract of erythroxylon .	fʒiv.
Glycerin (or syrup of bitter orange, or syrup of wild cherry) . .	f℥iss.
Water sufficient to make . .	f℥iv.—M.

Dose.—A tablespoonful every three or four hours.
S. SOLIS-COHEN, *Phila. Polyclinic*, vol. iii, No. 43.

The Employment of Pilocarpin in the Treatment of Pharyngeal Diphtheria and Croup.—As a result of clinical observations in a series of cases, DEGLE (*Wiener medizinische Presse*, 1894, Nos. 50, 51) arrives at the conclusion that, in the treatment of pharyngeal diphtheria and croup, pilocarpin is a more useful remedy than any hitherto reported. Its action, however, is not believed to be specific, but is attributed to the increased secretory activity of the mucous membranes induced. The remedy is not so dangerous in children as experience has shown it to be in the case of adults. The extremely grave cases will not yield to pilocarpin, as they will also not yield to other remedies. In urgent cases, subcutaneous injections may be employed. Under any conditions, early and energetic application of the drug is to be commended.

The Treatment of Whooping-cough.—CHATEAUBOURG (*La Médecine Moderne*, 1894, No. 103, p. 1614) reports a group of five cases of whooping-cough in which injections of guaiacol and eucalyptol were employed with excellent results. The injections consisted of two-and-one-half c.c. of a 10 per cent. solution of guaiacol and eucalyptol in sterilized oil, and were repeated daily. In all instances the symptoms rapidly subsided after the third injection, diminution in the cough being particularly noted; vomiting soon ceased, the appetite was restored, the general condition improved, and the strength conserved.

Treatment of Peripheral Neuritis with Hypodermic Injections of Strychnin.—STODART-WALKER (*British Medical Journal*, No. 1773, p. 1425) has reported three cases of peripheral neuritis in which the subcutaneous injection of strychnin in doses of from gr. $\frac{1}{30}$ to gr. $\frac{1}{30}$, three times a day, was speedily followed by permanent improvement.

The Treatment of Delirium Tremens.—HASKOVEC (*Comp. Rend. Hebd. des Séances de la Soc. de Biol.*, ser. x, t. i, No 33, p. 810) recommends the administration of chloralose in doses of from 4½ to 9 grains, once or oftener, in the treatment of delirium tremens, and reports five illustrative cases.

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SATURDAY, JANUARY 26, 1895.

THE FIRST SYMPHYSIOTIMIES IN AMERICA.

IN the month of February, 1894, we received from DR. J. O. WILLIAMS, of William Penn, Texas, an account of three symphysiotomies performed by him: the first on April 29, 1880, at Denison, Texas, the second on July 15, 1884, in Washington County, Texas, the third in May, 1889, in Washington County, Texas. We concluded, of course, that so astonishing a report needed further investigation and proof, and at once set about its verification. Almost a year has been consumed in a voluminous correspondence between the Editor of THE NEWS, in conjunction with the great statistician, DR. R. P. HARRIS, whom we naturally consulted in reference to the matter, and DR. WILLIAMS, as also with many physicians and residents of Texas.

The result of the whole investigation is a mass of cumulative evidence, the details of which we think it unnecessary to publish, that has entirely convinced both DR. HARRIS and ourselves of the truth of the claim made by DR. WILLIAMS.

Instead of publishing the report of the cases just as DR. WILLIAMS had sent it to us, we prefer,[1] for a number of reasons, to epitomize the details and add our own word of editorial comment.

CASE I.—During 1879 DR. WILLIAMS, then of Denison, Texas, was consulted by a girl thirteen years of age, and also by her mother, in reference to the child's pregnancy. They demanded that an abortion should be produced. This was refused, and by a solemn promise of absolute secrecy DR. WILLIAMS succeeded in getting *their* promise to allow the pregnancy to come to term, upon the condition that he would then secretly deliver the child, etc. This was done on April 29, 1880. The girl had been in "violent labor" for eighteen hours, and delivery was only possible by means of the idea, spontaneously occurring to DR. WILLIAMS at the time, of separating the pubic bones by means of a tenotomy-knife. "With one hand the clitoris was depressed to the right side and the blade made to enter as centrally as I could direct, until the point came in contact with the bone. It was then forced upward along the front until the superior margin was reached. I grasped the knife between my fingers and thumb, and, as forcibly as I would risk, drew the blade along the symphysis. The bones yielded and very gently separated before the blade had traversed the entire extent. The bones parted, so that I could depress the overlying tissues and the ends of my fingers between them. I now had no trouble in applying the forceps and delivering the child, which weighed twelve pounds. The mother and child did well." DR. WILLIAMS then went to a dressmaking establishment and gave directions for a laced abdominal and pelvic band, or bandage, which was "applied and was worn for the remainder of the time that I had the patient under charge, probably a month or six weeks."

In connection with this case it will readily be seen that the details of names, the exact place of the operation, the street-number, etc., cannot be published if the promise of Dr. WILLIAMS is to be kept. The interested persons still live, and any such disclosure would at once result in tragedy. But we have in our possession every particular necessary to establish the absolute accuracy of the foregoing report of facts, and can unqualifiedly vouch for their truth as given.

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[1] One reason for this decision may be gleaned from these words of Dr. Williams in a letter: "Writing or reporting anything of my own work is just as contrary to my inclination and desire as anything I can possibly undertake. If you see proper to allow space in your valuable journal for what I have written, you will have to take the trouble upon yourself of *dressing it up* in fashionable language in keeping with the high tone of your periodical, etc."

The particular reasons for secrecy do not exist in the second and third cases, and these help to furnish indirect proof of the truth of the report of the first case.

CASE II.—DR. WILLIAMS' second operation was performed on July 15, 1884, upon Mrs. S. W. Wicks, of Washington County, Texas. The woman was twenty-three years of age, and this was her first pregnancy. She had been in labor "many hours." "I found a badly contracted and disturbed pelvis. I tried to separate the bones, as in Case I, with the tenotomy-knife, but failed. I then used a probe-pointed curved knife, placing the extremity of the cutting surface of the blade on the superior margin of the symphysis, forcing the blade through the overlying tissues, and as the blade came down upon the bone the handle of the knife was elevated so that the point or extremity was maintained in close proximity to the posterior surface of the symphysis, and, guiding it by the finger of the other hand in the vagina, the blade was carried down until the large part of the blade was in contact with the bone. I now exerted all the pressure permissible, and after much worry and some discouragement I discovered the bones yielding. I withdrew the knife, and, as the contraction renewed, I made pressure over the fundus. The bones now parted, and I applied the forceps, but failed to deliver. I now perforated the head, again applied the forceps, and effected delivery. I drew the one-and-one-half inch flesh wound together with adhesive strips, and placed on a nice-fitting bandage. The woman was up and said she felt well on the twelfth day."

As a bit of confirmatory testimony the following affidavit, copied from the original in our hands, may be appended:

Newton County, Ga.:

I, S. W. Wicks, do hereby certify that I lived in Washington County, State of Texas, in the year 1884; that on the 15th day of July, in said year 1884, I was confined, and that Dr. J. O. Williams, of Penn, Texas, attended me during said confinement. There was some trouble in getting the child from me that I cannot exactly explain; but afterward the Doctor (Williams) told me he had tried to save the child, but could not do so. He said that he had *separated* the bones in my hips in order to get the child from me, and that I would be compelled to remain sometime in bed, keep quiet, and be carefully looked after, or I would suffer afterward, and may be never get well. I was kept *bandaged* and my limbs together. I felt so well that on the twelfth day I was up all day. I had been up several times for a short while before this, but was up all day on the twelfth day—went visiting in three weeks. I have felt no bad effects since then from my difficulty. On October 1, 1886, I gave birth to a son, who is now alive.

S. W. WICKS.

Sworn to and subscribed before me, this June 18, 1894.
[SEAL.] JOHN B. DAVIS,
Clerk Supreme Court, Newton Co, Ga.

CASE III.—This operation was performed in May, 1889. The patient was a negress, about eighteen years of age. She had been in convulsions for thirty hours, with pains similar to those of labor for two or three days before. "I found the pelvis so contracted transversely that it was with some difficulty that two fingers could be passed. I at once decided upon pubo-symphysiotomy, which was readily accomplished as in Case II. The forceps was applied, the child delivered, and with much difficulty resuscitated. The report was that the woman 'had not passed urine since the fits had set in,' and probably not for a day or two before that time. The woman died, but the child lived."

The following affidavit, with other testimony, is confirmatory of the foregoing report:

THE STATE OF TEXAS,
County of Washington:

Before me, the undersigned authority, on this day, personally appeared B. F. Dotson, who, being by me duly sworn, deposes and says, that he was present and assisted Dr. J. O. Williams in attending a negro girl who had been having labor-pains about four days under the attention of a woman, but could not give birth to the child. She had been having convulsions for several hours before I knew of her being seriously ill; they were renters on my place. I told the husband of this woman to go for a doctor or he would have a dead wife. The woman was unconscious and having frequent convulsions.

I sent for Dr. J. O. Williams myself. He came, and tried to take the child, but failed in doing so.

He spoke to the relatives about opening the belly and removing the child that way, but they were not willing to that. I told the Doctor to go on and do as he thought best, and that I would assist in any way I could. I held the legs in suitable position and the Doctor passed a knife-blade in center of the hip-bones, and they separated so that in a few moments he could take the child, which after some time begăn to breathe, and got along all right and lived about one year.

The woman had been in convulsions all this time, and remained so to her death, about three days afterward.

Her hips were bandaged tightly, but she would sometimes jump out of bed, and I think one time ran out of the house.

I heard the Doctor say that he performed the same operation in relieving a lady, Mrs. W., who some years ago lived on my place and was in the same house as this girl now was.

The operation upon the girl in which I assisted was in May, 1889. The one upon Mrs. W. was, I think, about four years before this. B. F. DOTSON.

Sworn to and subscribed before me, this March 14, 1894. [SEAL.] E. P. CURRY,
County Judge of Washington County.

This is to certify that I know Mr. B. F. Dotson personally, and that he is an extensive farmer and prominent man of this county, and perfectly reliable in every respect. E. P. CURRY,
County Judge of Washington County.

We could easily fill a whole issue of THE MEDICAL NEWS with details and incidents in connection with these cases, especially of the first, and with excerpts from the letters of DR. WILLIAMS, and every line we are certain would be voted of absorbing interest by our readers. We almost regret the lack of space to do so, and at least wish that a historic essay might be written concerning the matter. We can imagine no novel of more intense interest, no sociologic study more bountiful in instruction. Here was a man who spontaneously conceived and thrice carried out the operation of symphysiotomy before any American surgeon. He was frankly deficient in preliminary education and placed in a frightful tangle of most distressing and possibly tragic circumstances, no hint of which we have been able to give. He was surrounded by a set of conditions the dramatic interest of which we have scarcely seen equalled upon the stage. Through it all he has carried himself, and out of it all he has brought himself, with a combination of shrewdness, and modesty, and probity beyond all praise. We cannot forbear a short characteristic quotation from one of his private letters:

> I care not how successful a doctor is, or how many affixes he can lawfully link with his name. Or of what religious denomination he is a *faithful* follower of—aggressive or conservative in his professional life it makes no difference, he will have a neighbor that would not permit him to *doctor* his *unfaith*ful hound. My idea is that every individual has individual rights and privileges, that will not interfere with those of others, and then a *general* governing principle that surmounts, pervades and limits this physical life of ours, so that the life of one that tends to perfect *the Ego*, and at same time lends honor to the general body or unity; that has an *honest*, firm purpose, and the determination to "hew as near the conceived line of truth as possible, the chips falling where they may," constitutes the life of a true man. Educated or illiterate the measure holds good and the article is so many Carats fine in proportion as *opportunities* have been *rightfully* utilized—just *how we've improved ourselves* and *governed* is the *weights* upon the beam of life's scale.

The chief lesson that springs to view is one that has been summed up in the expression of DR. HARRIS: *In your reports and statistics, wait until you hear from the backwoods.* "The backwoods" are often deficient in literary qualities, and in many of the arts of modern medicine, "push" and self-assertion included, but they are often profoundly ingenious, and not seldom exhibit an unchronicled heroism quite equal to any that vaunts itself in populous places.[1]

THE NEED OF A DEPARTMENT OF HYGIENE AT WEST POINT.

THE report of the Committee on Hygiene and Athletics, composed of Messrs. W. W. KEEN, JOHN C. BLACK, and JOHN J. DAVIS, of the Board of Visitors of the United States Military Academy at West Point, contained in the report to the Speaker of the House of Representatives (for the year 1894), contains some points of exceptional interest. That the sanitary conditions prevailing at West Point are good is seen by the fact that during the year no case of infectious disease occurred among some 1300 students. For the large amount of eye-strain that is evident, one-fifth of the cadets requiring glasses, the committee makes some excellent suggestions as to ocular hygiene. But we fear the committee leans too much toward the old-time view that eye-strain arises from poor light, from level instead of sloping desks, etc., whereas the truth must be acknowledged that if ametropia exists (and exist it does in much greater degree and more frequently than is supposed), all the hygiene, so-called, in the world will not replace the need of correcting glasses.

The committee has made the astonishing discovery that the entire instruction in hygiene at West Point is "limited to six advance lessons (and five review)," and one lecture on first aid to the injured. That this is ludicrously insufficient will be evident to anyone giving the subject a moment's consideration. We cannot, however, forbear quoting the wise words of the committee:

> The sanitation of armies during war is not merely a medical question. However desirable the medical requirements may be, military necessities may make it

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[1] Dr. Joel O. Williams is well known to me through a long and voluminous correspondence not yet ended. I regard him as a man of strong individuality, a lover of truth, and reliable in his statements, from principle and moral training. B. F. Dotson, who aided him in his third operation, was at one time a student of medicine. Mrs. Wicks is a widow, and reported to me as a good, reliable woman by those who knew her in Newton, Georgia. The child of Case 1 is thought to be living.—ROBERT P. HARRIS.

needful to disregard them, even at serious risk to the health of the army. But in probably the majority of cases this is not true, and when not so the importance of the proper location and sanitation of camps and barracks and of those medical precautions which may be highly conducive to the health and therefore to the success of an army should be fully understood by the officers of the staff and line, so that they may appreciate their stringent necessity and act in accordance with them, instead of inviting disaster by their violation. This violation will be none the less injurious or even fatal to the military success of an army because it is committed unintentionally and purely from ignorance of the laws of health, for these laws require obedience and enforce their own penalties as rigidly as the laws governing military operations themselves.

In addition to this it needs no argument to convince any intelligent man of the importance of every soldier and officer knowing how to render effective first aid to the injured and wounded, especially in an occupation one of whose chief objects and dangers is the infliction and reception of such wounds and injuries. In fact, in the past, especially in small commands on duty without a medical officer, most valuable lives actually have been lost to the army and the country for the want of exactly such knowledge. Instruction in first aid is given with reasonable fulness to the soldiers at this command, as each of them serves in turn as a company bearer. Prospective officers should certainly be as well instructed as their men, and if possible better.

The suggestion that there should be a chair of anatomy, physiology, hygiene, and first aid to the injured, commends itself as a most belated and much-needed step in progress. Surely some of the 565 hours devoted to chemistry, mineralogy, and geology might profitably be given to health.

As to athletics, the committee rightfully praises and commends its cultivation. But as to foot-ball there is a noteworthy qualification. The comparative statistics offered are the only ones in existence that can lay claim to scientific accuracy.

From them we quote as follows:

TOTAL INJURED.	
Foot-ball	54
Riding	17
Gymnasium	9
Total	80

Injuries in riding and gymnasium usually very slight.

Days lost from—

Foot-ball accidents	277
Injuries in riding	57
Injuries in gymnasium	11

Per cent. of accidents per man in—

	1892.	1893
Foot-ball	01.05	01.6
Riding	0.11	0.09
Gymnasium	0.10	0.08

Per cent. of days lost per man in—

	1892.	1893.
Foot-ball	3.93	8.01
Riding	0.35	0.31
Gymnasium	0.10	0.15

Per cent. of men off duty per diem in—

	1892.	1893.
Foot-ball	1.18	3.01
Riding	0.79	0.63
Gymnasium	0.64	0.12

Per cent. of days lost per accident in—

	1892.	1893.
Foot-ball	2.98	5.01
Riding	2.74	3.04
Gymnasium	5.80	1.02

To obtain the comparative percentage of foot-ball and riding accidents multiply the percentages of foot-ball accidents by 3, as foot-ball is only played once a week, and riding is done three times a week.

To obtain the comparative percentages of foot-ball and gymnasium accidents multiply the foot-ball percentage by 6, as the exercise in the gymnasium is taken six times a week.

The committee concurs in the Superintendent's advice that the interacademic games be abandoned.

EDITORIAL COMMENTS.

Successful Celiotomy for Perforating Typhoid Ulcer with Peritonitis.—The most alarming, as well as the most fatal, complications of typhoid fever are intestinal hemorrhage and intestinal perforation. Recovery may ensue after either, although it cannot be said that much can be done medicinally to favor such a result. In the nature of things the danger is less great from hemorrhage than from perforation, although, as intimated, cases have been reported in which it was believed that recovery followed intestinal perforation. In view of all of the circumstances and particularly of the fatality of the complication if left to itself, the only logical mode of treatment seems to reside in operative interference The number of instances in which the surgeon has intervened is as yet not a large one, and although the results have not been invariably as favorable as they might be, enough has been demonstrated to show that the operation is a life-saving one, and the proportion of successes must increase as the occurrence of the complication is recognized early and the cases come immediately under the notice of the surgeon. To the successful cases already on record is to be added another in the hands of an American surgeon.

Abbe (*Medical Record*, No. 1261, p. 1) has reported the case of a young married woman, twenty-one years old, who, in the third week of an attack of typhoid fever, when convalescence appeared to be setting in, was seized with great pain associated with a feeling as if something had suddenly given away in her abdomen below the umbilicus. The woman vomited, became much collapsed, and the temperature rose rapidly to 102°; great pain and tympanites were present. Perforation was suspected and the patient was kept absolutely quiet, poultices being applied to the stomach, and sufficient morphin being given to allay the great pain. The temperature fell somewhat, but for two days ranged between 102° and 102.5°. The vomiting subsided, but the tympanites continued. At the end of the second day the woman's condition became suddenly worse, the pulse grew weaker and the abdomen greatly distended.

It was now determined to operate, and a median incision below the umbilicus exposed distended coils of deeply-congested and greatly-inflamed intestine smeared with sticky lymph. The pelvis and lower abdomen were filled with a collection of foul, purulent, and fetid intestinal extravasation. This was feebly confined by matted coils of intestine loosely glued together and which broke apart on being touched, but, being recognized, permitted the introduction of clean celiotomy-sponges. Under the upper abdominal wall a few coils were seen that showed more recent inflammation. Two pints of foul, purulent fluid and thick lymph were cleaned out and the abdomen irrigated with warm and weak sublimate solution, 1 : 20,000, followed by plain warm water. In the lower part of the ileum were found many thick, oval patches, having their long axes parallel to that of the bowel, easily identified by touch as the intestine passed through the fingers, and shown also by increased subperitoneal hyperemia. One such inflamed Peyer's patch presented a gangrenous perforation a quarter of an inch in diameter, from which intestinal contents were seen to make their exit. The opening was closed by interrupted silk sutures, over which two layers of mattress stitches were placed, as these were the only sutures that would hold in the tender and inflamed intestinal coat. A large abdominal tamponade of iodoform-gauze was placed within the abdomen and pelvis, and no attempt was made to close the wound. An enema of hot black coffee and whiskey assisted greatly in preventing shock. The patient was put back to bed in three-quarters of an hour from the beginning of anesthesia. She passed a good night and had a strong pulse on the following morning. The tympanites was also less.

At the end of forty-eight hours the patient was in good condition, when the tamponade was replaced by a new and loose one and five grains of calomel were administered. A little fluid feces leaked from the wound after the action of the calomel, and continued so to do for two weeks. The abdominal wound pursued the usual course, closing in rapidly by granulation and leaving a narrow and firm scar. After the third day the appetite improved and rapid convalescence ensued.

The Murderer and the Ocular Photograph.—The student of psychology, both morbid and sociologic, finds nowhere better material than in medical superstitions. The immortality of these superstitions is wonderful. They are not affected by civilization, and the growth of science and of common sense leaves them untouched. Of late the newspapers of the land have been immensely interested in the astonishing exhibitions in the eye of a murdered woman of the photographic image of her murderer. The "local scientist" examines the dead woman's eye, and by "a magnification of 400 diameters" he finds plainly the image of a "man's form." Coroner, clergyman, and others saw the startling photograph. There is something not a little pathetic in the impulsive desire on the part of poor humanity to find that divine retribution has contrived some secret means whereby crime shall be found out. But when we read the account carefully we find that in the present case the "local scientist" examined the dead woman's eye as it rested naturally in the socket. That, of course, means that he examined the cornea, because without the aid of the ophthalmoscopic principle the retina of the undissected eye is still as invisible as it was before Helmholtz invented the ophthalmoscope. But, unless the woman wore biconvex lenses of some thirty or more diopters, how, in the name of optics, would an image be formed upon the cornea? This leaves out of the count the facts that nobody ever wore such lenses, and that if one did no image could be formed of the murderer a few feet away, and that the cornea is a light-transmitting structure, without any analogy to that of the retina or a photographic sensitive plate. We suppose that this kind of popular science had in mind a vague echo of the experiments with the visual purple of the retina, which seemed to give some warrant for the belief in retinal fixation of the last image seen before death. But the unconscious transferring of the seat of the changes to the cornea was as remarkable for blundering and for jumping to conclusions as such science could well be. It is this condition of mind that makes visible what does not exist and that renders human testimony as regards certain things utterly valueless.

The Lancet Relief Fund.—The Sixth Annual Report of the Almoners of the Lancet Relief Fund shows a continuance of the good work for the prosecution of which the Fund was instituted. Every January the proprietors of the great metropolitan medical weekly whose name the Fund bears provide $1500 for the Fund, which is administered free of cost by a committee of almoners consisting of the President of the Royal College of Physicians of London, the President of the Royal College of Surgeons of England, the President of the General Medical Council, Mr. Thomas Wakley and Mr. Thomas Wakley, Jr. The Fund has for its object the rendering of immediate pecuniary assistance to registered medical practitioners or to the widows or orphans of members of the profession in cases of distress and emergency, by the grant of money by way of loans free of interest, or gifts, as the circumstances of the various cases may require. During the year 1894 the sum of $1720 was granted in relief, while repayments of loans to the amount of $105 were made. There were fifty-six applicants for relief; assistance was afforded in twenty-six of these, the amounts granted ranging from $25 to $150.

Foot-ball Impetigo.—To the opprobrium under which the game of foot-ball already rests is yet to be added the responsibility of causing a peculiar form of cutaneous disorder. For the purpose of obtaining information as to the etiology, nature, and treatment of the affection, which was recently prevalent among English foot-ball players, the Council of the Medical Officers of Schools Association of London has issued an appeal asking for data as to (1) the nature of the site upon which the school stands, whether the pupils are affected or not; (2) whether Association or Rugby foot-ball is played; (3) the nature of the disease, particularly as to its contagiousness; (4) the prophylactic and curative treatment proper to the disease. The disorder is believed to be contagious, and occurs principally on the face, ears, and neck, and sometimes on the hairy scalp. It successively passes through stages of erythema, papule, vesicle, and purulent crust.

Attendance of the Medical Colleges of the United States and Canada.—From statistics gathered by the *Journal of the American Medical Association* it is estimated that the aggregate attendance of the medical colleges of the United States and Canada for the session of 1894–95 will reach 20,800, as compared with 18,500 for 1893–94, and 18,340 for 1892–93. The great gain of the session of 1894–95 is found to be at the expense of higher medical education (which is made to stand for a lengthened term of study); for while in 1893–94 there were 803 four-year students, there were but 781 in 1894–95. The following comparative figures are given as the relative number of students to the population in various countries: In the United Kingdom 1 : 5286, in France 1 : 7776, in Germany 1 : 5757, in the United States and Canada 1 : 3365.

The Annual Report of the New York State Board of Health contains some interesting data. The death-rate for 1893 was 19.50; for 1892, 20.78; for 1891, 21.43; and for 1889 and 1890, 19.65. The highest mortality occurred in the months of March and July, the lowest in June and November. The mortality among children under five years of age was 33.6 per cent. of the deaths at all ages. Zymotic diseases caused 180 deaths in every 1000 deaths from all causes. During the year 1893, 20,310 cattle were examined for tuberculosis, at an average cost of 47 cents per head; 687 were found to be tuberculous, and were therefore killed. The diagnosis was based upon reaction to injections of tuberculin. Eight samples of butter were examined bacteriologically, some having been prepared from the milk of tuberculous cows, but no tubercle-bacilli were found.

NEWS ITEMS.

The Cleveland Medical Society at its annual meeting, held recently, elected the following officers: *President*, William E. Wirt; *First Vice-President*, Augustus F. House; *Second Vice-President*, Henry S. Upson; *Recording Secretary*, W. F. Brokaw; *Corresponding Secretary*, Frank S. Clark; *Treasurer*, N. Stone Scott; *Librarian*, William E. Bruner; *Censors*, M. Rossenwasser, Howard S. Straight, L. B. Tuckerman, A. J. Cook, W. J. Scott; *Pathologist*, A. P. Ohlmacher; *Trustees*, H. G. Sherman, Charles Gentsch, C. F. Dutton. The society has 291 members. The average attendance for the year was 135. The society meets every two weeks.

Correction.—By an inadvertence it was announced in THE NEWS of January 19th that the next meeting of the Pennsylvania State Board of Medical Examiners will be held on February 14th, whereas the date should have been February 12th. We would also correct the statement in the same number as to the examination of bacteriologists for the positions of bacteriologist and assistant bacteriologist of the Philadelphia Bacteriologic Laboratory. The examinations are open to all, whether residents of Philadelphia or not, and the appointees being under civil service regulations are not subject to removal by "political" changes or influences.

A National Congress of Tuberculosis is to be held in the buildings of the University of Coimbra, Portugal, on March 24th, which is the date on which Koch announced his discovery of the tubercle-bacillus.

Prof. J. Burdon Sanderson has been appointed Regius Professor of Medicine in the University of Oxford, in succession to Sir Henry Acland.

A Statue of Helmholtz is contemplated in Berlin. The German Emperor has expressed a willingness to contribute $2500 to a fund for the purpose.

Medical College Amalgamation.—It is announced that the Chicago College of Physicians will consolidate with the University of Illinois.

Sir Joseph Fayrer has retired from the office of President of the Medical Board at the India Office in London.

Lady Paget, wife of Sir James Paget, died January 7th, at the age of eighty years.

BOOKS AND PAMPHLETS RECEIVED.

Text-book of Anatomy and Physiology for Nurses. Compiled by Diana Clifford Kimber. New York and London: MacMillan & Co, 1894.

Transactions of the American Surgical Association. Vol. XII. Edited by De Forest Willard, M.D. Philadelphia: Printed for the Association and for sale by William J. Dornan, 1894.

A Manual of Hygiene. By Mary Taylor Bissell, M.D. New York: The Baker & Taylor Co., 1894.

Primary Melanotic Sarcoma of the Eyelid, with Report of a Case. By M. W. Zimmerman, M D. Reprinted from the Ophthalmic Review, vol. xiii, 1894.

Notes on Some Cases of Congenital Malformations of the Face and Ears. By C. A. Hamann, M.D. Reprinted from the University Medical Magazine, 1894.

A Study of Scarlet Fever at High Altitudes. By J. N. Hall, M.D., and William P. Munn, M.D. Reprinted from the Journal of the American Medical Association, 1894.

Shipowners and Ships' Surgeons. Including Truth's Article (August 24, 1893) "Doctors at Sea." By Charles Henry Leet. Pamphlet. Liverpool: Seaforth, 1893.

Distraction in the Treatment of Hip Disease. By Edward H. Bradford, M.D., and Robert W. Lovet, M.D. Reprinted from the New York Medical Journal, 1894.

Text-book of Nervous Diseases, being a Compendium for the Use of Students and Practitioners of Medicine. By Charles L. Dana, A.M., M.D. Third Edition. New York: William Wood & Co., 1894.

Report of the Special Committee on Public Poor Relief in Waterbury, Conn., 1894. Waterbury, Conn.: The Jackson Quick Printing Co., 1894.

Notes on Disease of the Ear and Upper Air-Passages in Apex Catarrh. By Howard S. Straight, A.M., M.D. Reprinted from the Medical Record, 1894.

Symphysiotomy *versus* the Induction of Premature Labor. By Charles P. Noble, M.D. Reprinted from the Transactions of the American Gynecological Society, 1894.

Practical Manual of Diseases of Women and Uterine Therapeutics. For Students and Practitioners. By H. McNaughton-Jones, M.D., M.Ch., M.A.O. Sixth edition. London: Ballière, Tindall & Cox, 1894.

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ORIGINAL ARTICLES.

THE TREATMENT OF COMPOUND FRACTURES.

BY EDWARD HAMILTON PERSHING, M.D.,
OF LAWRENCE, LONG ISLAND.

IN no class of surgical cases have the results of antiseptic treatment offered a greater contrast to those obtained in the pre-antiseptic days than in compound fractures. One of the leading surgeons of New York, who was once an interne of Bellevue Hospital, has repeatedly stated that during the eighteen months of his service there every case of compound fracture of the femur brought to the hospital, and there were a great many, died of septic infection. In contrast to this appalling record, the same institution, or any other modern city hospital, could to-day show case after case of severe compound fracture in which not only has life been saved, but a useful limb as well, and in which pus has not at any time been found in the wound. There is apparently very little recent literature on the subject of the treatment of compound fractures, most treatises on fractures dismissing it with the general statement that the wound should be treated on the usual antiseptic principles, and the fracture put up in a suitable retentive apparatus. It would seem that some account of the practical details of treatment of these cases as they occur in the service of a general hospital would have a certain value.

That the sound principles of antiseptic surgery, as applied to compound fractures, are not even now universally accepted is shown by the presence of an article in a current medical journal advocating the use of poultices. The writer assumes that suppuration is inevitable, and thinks poultices would hasten the appearance of pus and tend to prevent septic absorption. He is sufficiently impressed, however, with the value of asepsis to suggest that the poultice might be rendered aseptic by the addition of carbolic acid, and that by changing it every hour the possibility of its becoming a culture-field for germs might be prevented. It would seem scarcely necessary to point out that any dressing requiring such frequent changing would be a most unfortunate one for a fracture, and it is hardly possible that poultices will ever again become a favorite dressing for an open wound, even with the concession to cleanliness implied in the addition of carbolic acid. However, it is not at all necessary to assume that even the most unpromising compound fracture is certain to suppurate, as the following report of twenty cases clearly shows. These cases occurred in the services of Dr. C. K. Briddon and Dr. A. J. McCosh, in the surgical division of the Presbyterian Hospital, New York City, during a period of about six months.

Pus appeared in the wound of but one case treated in the hospital. In another, although the wound did not suppurate, and the patient appeared to be doing well, symptoms of tetanus appeared on the twelfth day, and the man died a week later. In a third case the patient left the hospital against advice, on the second day after the injury, and reappeared one week later with the wound infected. In all the other cases the wound remained clean throughout, healed readily, and a practically perfect result was obtained in each.

All of these patients were subjected to the ordinary dangers of infection from dirty clothing and dirty surroundings at the time of injury. Many of them received their injuries in the street, and the street-filth was liberally rubbed into their wounds. Some had, in addition to the broken bone and the wound leading to the point of fracture, extensive laceration and contusions of the surrounding tissues. The fact that such cases as these last escaped suppuration would certainly show that every case ought to be treated with the distinct purpose of rendering the wound aseptic, and keeping it so, and in no case should this be regarded as hopeless.

The general line of treatment was in all cases the same. Most of them were brought in by the ambulance. When the bone was found protruding from the wound no attempt was made by the ambulance-surgeon to reduce the deformity, on account of the liability of introducing dirt or other infective material into the depths of the wound. A liberal dressing of iodoform-gauze and sterilized gauze was applied to the wound, the limb immobilized by a suitable splint, and the patient taken at once to the hospital. Here an anesthetic, usually ether, is given. The limb is shaved, scrubbed with green soap, followed by ether, and finally irrigated with a solution of mercuric chlorid of 1 : 1000. The wound, protected during the cleansing of the skin by packing of iodoform-gauze, is now irrigated with bichlorid solution 1 : 1000. This should be done very thoroughly, in many cases as much as two or three quarts of the solution being used. From this point the same details are scrupulously observed as in any surgical operation.

The site of the injury is surrounded by sterilized towels. All instruments are boiled, and the hands of the surgeon and assistants are of course carefully disinfected. An examination of the wound is made; the position of the fragments, the amount of comminution, and the extent of laceration of the soft parts are accurately ascertained, remembering also the possibility of injury to the large vessels and nerves in the neighborhood. When there is much subcutaneous laceration, caused by the violent movements of ragged fragments of bone, the skin over the lacerated muscles should be opened up by liberal incisions and the wound again thoroughly irrigated with bichlorid solution. The incisions give to the irrigating fluid certain access to all parts of the wound, and also insure perfect drainage later, when the wound is packed with gauze. When it is remembered that infective material has been carried into the depths of nearly all these wounds before they come under treatment, the thorough opening up of all recesses and pockets seems most important. If the bone is comminuted, small loose fragments are removed. The deformity is then reduced, the fragments being brought into apposition, and the limb is held in the most perfect position possible, while the wound is packed with iodoform-gauze, and a large dressing of sterilized gauze applied. A few narrow strips of bass-wood splint, soaked in bichlorid solution and bandaged to the limb with a sterilized bandage, afford an additional precaution against the fragments slipping out of position during the application of the splint. A layer of sterilized cotton is bandaged over these coaptative splints, and the limb is put up in a suitable immobilizing apparatus. In nearly all the following cases a splint of plaster-of-Paris was used.

In those cases in which the fragments readily slip out of position, and when it is difficult or impossible, by simply holding the limb in position, to retain them in accurate apposition, it may be necessary to fasten them together with sutures of silver wire or silkworm-gut. In the great majority of cases this will not be called for, but two in the following list have been so treated.

When the wounds in the soft parts are extensive it is an open question as to whether, after disinfection, they should be partially closed by sutures. Some cases treated in this way have given results that were all that could be desired. There are certain considerations, however, that strongly argue in favor of leaving the wound entirely open and packing it throughout with gauze. No time can be saved by sewing it up, since, even when left open, the wound in the soft parts will be healed before the bone has united with sufficient firmness to permit active use of the limb. But the consideration of greatest weight in determining treatment is the additional security against suppuration which is obtained by leaving the wound open, and packing it throughout. As suppuration is the usual cause of failure to obtain a good result, every possible safeguard against it is of importance, and it is always to be remembered that we are dealing with a wound infected from the beginning.

The splint is removed and the dressing changed for the first time in ten days, or two weeks after the injury, unless pain or a rise of temperature should render an earlier examination of the wound advisable. At this time any malposition of the fragments can still be corrected, as there will not be any appreciable union. The following cases were all treated as described, with such modifications as the peculiarities of each demanded:

Case I was a boy, sixteen years of age. While running he fell down an embankment a distance of fifteen feet, striking on a large stone. Examination revealed a compound fracture about the middle of the right femur. The upper end of the lower fragment was protruding from the wound, which was on the outer side of the thigh. There was considerable subcutaneous laceration of the muscles. After cleansing of the limb, the patient being under ether, the wound was irrigated with a bichlorid solution 1 : 1000. It was then enlarged by incisions through the skin exposing the lacerated tissues beneath, and again irrigated. It was somewhat difficult to bring the fragments into exact apposition, but this was accomplished by firm traction on the limb. The wound was then packed with iodoform-gauze and a large dressing of sterilized gauze and sterilized absorbent cotton applied. The straps for a Buck's extension-apparatus were placed in position, running well above the knee on either side, and the entire limb was then put up in a plaster-of-Paris splint, running from the toes to the groin. A weight of fifteen pounds was attached. The highest temperature was 101°, on the second day after the accident. The splint was cut down and the dressing changed on the tenth day. The wound was clean, and there was no appearance of any inflammatory action. The wound was washed out with hydrogen dioxid and bichlorid solution 1 : 5000, repacked and dressed, and a new plaster-splint applied as before. The dressing was changed, and a new splint applied every two weeks. The wound was entirely healed in eight weeks, no pus having appeared in it at any time. Union of the fracture was delayed, but finally became firm. When seen, six months after the injury, there was no deformity, and the limb was as useful as the other.

Case II was a boy, eight years of age. He was run over in the street by a coal-cart, the wheel passing over his right thigh. Examination under ether showed a fracture of the femur, near its mid-point, with a large, ragged wound leading directly to the point of fracture. The tissues were much torn and contused. After cleansing the limb the wound was irrigated with bichlorid solution 1 : 1000. There was ready access to all parts of the wound, rendering any enlargement unnecessary. The bony fragments were so shaped that they could be interlocked in apparently perfect position. On this account the leg was put in a plaster-of-Paris splint, without the addition of a Buck's extension-apparatus, after the wound had been packed with iodoform gauze and a copious dressing of sterilized gauze and cotton applied. The splint was carried above the thigh by means of a spica of the hip, thus immobilizing this joint. There was no rise of temperature, and but little pain. The splint was removed and the dressing changed on the tenth day. There was no pus or evidence of inflammation about the wound, but it showed some tendency to sloughing where the contusion had been greatest. It was irrigated with hydrogen dioxid and bichlorid solution 1 : 5000, loosely packed with iodoform-gauze, and dressed with sterilized gauze and cotton as before. Although the position of the fragments was apparently perfect, the possible danger of shortening of the limb made it seem safer to apply a Buck's extension-apparatus. This was done, the straps being carried almost to the point of fracture. Immobilization of the fragments was secured by means of coaptation-splints of tin, cut to fit the contour of the thigh, and fastened to it by means of straps and buckles. This line of treatment was continued, the wound being dressed once a week. There was no pus at any time. At the second dressing all sloughing had ceased, and the wound was beginning to granulate freely. In nine weeks the wound was healed, and union was firm, with no shortening. When seen four months after the injury the boy walked with no evidence of having been hurt, the result being practically perfect.

CASE III was a boy, thirteen years of age. While riding a bicycle he collided with an ice-wagon. The wheel of the wagon is said to have passed over his left leg. The handle of the bicycle was driven into the tissues of the left thigh on its outer aspect. Examination under ether showed an extensive lacerated wound on the inner side of the knee, extending into the popliteal space and exposing the inner hamstring tendons. The internal saphenous vein was torn across. A punctured wound on the outer side of the lower third of the thigh also extended into the popliteal space communicating with the wound on the inner side. The posterior ligament of the knee-joint was torn away, and the finger passed readily into the interior of the joint. The popliteal artery and vein were intact, though it was difficult to understand how they escaped injury. There was a fracture of the lower end of the femur, the line of fracture running from the upper boundary of the external condyle, obliquely downward and inward into the knee-joint. Hemorrhage at the time of the accident was so severe as to require the application of a tourniquet to the femoral artery. The wound was thoroughly irrigated with a solution of mercuric chlorid 1 : 1000, after the limb had been cleansed as described. The punctured wound on the outer side of the lower part of the thigh was found to run downward through the lacerated subcutaneous tissues to a point opposite the head of the fibula. This was laid open by an incision through the skin, and the whole wound again washed out. The tourniquet was removed and all bleeding vessels caught and tied. The fragment of femur was placed in as perfect a position as possible, and the wound packed with iodoform-gauze, one narrow strip running into the cavity of the knee joint to secure free drainage. The limb was put up in a long, posterior Volkmann splint, reaching to the ischial tuberosity. The patient was suffering acutely from shock and loss of blood, and had to be freely stimulated with whiskey and strychnin hypodermically. The temperature did not rise above 101.5°, and the patient made an almost uninterrupted recovery. The dressing was changed on the eighth day. No pus was found in the wound, and it was washed out with hydrogen dioxid and bichlorid solution 1 : 5000, and loosely packed with gauze. Subsequent dressings were made once a week, and this treatment repeated. In eight weeks the wound had healed except for a healthy granulating ulcer, and there was firm union in the fracture. There was also some motion in the knee-joint, though the boy still wore a posterior splint in going about the ward. Two weeks later the splint was removed, and he was encouraged to use the limb, flexing and extending the leg as much as possible. Four months after the injury he walked without a limp. The wound was entirely healed, and flexion and extension at the knee-joint were perfectly restored.

CASE IV was a man, thirty-eight years old, who fell down a well a distance of ninety feet, receiving numerous contusions and a compound fracture of the right patella, evidently caused by direct violence. The patient was first seen about fifteen hours after the accident, and no attempt had been made to cleanse the wound. It was bound up in dirty rags, and part of it was covered with a large paster-ballot, applied directly to the bleeding tissues. Examination under ether showed the tissues over the patella to be much torn and bruised. The line of fracture was transverse and near the middle of the bone. On the outer side there was some comminution, a number of small fragments being removed. The joint-capsule was extensively lacerated, and especially so on the outer side. There were marks of contusions involving most of the limb, from the lower part of the thigh to the foot. The skin having been cleansed as usual, the wound and joint-cavity were washed out with solution of bichlorid 1 : 10,000, several quarts being used. The joint-cavity was again irrigated with sterilized water. The fragments of the patella were united by means of sutures of silkworm-gut, one passed deeply through the insertion of the quadriceps extensor tendon at the upper border, and one through the ligamentum patellæ at the lower border. The free ends of these two sutures were tied over the anterior surface of the patella, thus securing and maintaining accurate apposition of the fragments. The sutures running over the anterior surface of the bone acted as splints and prevented any tilting of the fragments. The torn periosteum over the anterior surface of the patella was united by a few sutures of fine silk. The tear in the outer side of the capsule of the joint was also partly closed by sutures of catgut, leaving an opening large enough to accommodate a good-sized tampon of iodoform-gauze, which ran directly into the joint, to serve as a drain. Other tampons of gauze were carried into the depths of the wound in the soft parts, and a large dressing of sterilized gauze and cotton applied. The leg was put up in a long posterior Volkmann splint. The temperature rose rapidly, reaching 102.5° on the day after the operation, and 103.5° on the next day. The wound was then dressed and found full of pus. It was thoroughly washed out with hydrogen dioxid and bichlorid solution 1 : 5000, and loosely packed with iodoform-gauze, so as to give the freest possible drainage. The next day there was no improvement, the temperature being still high and the local process unchecked. A continuous irrigation of iced bichlorid solution, 1 : 10,000, was then begun. This caused a fall in the temperature and some lessening of the discharge of pus. All hope of union in the patella was abandoned, and the sutures removed, thus completely opening up the wound. For four weeks the improvement was slow, the temperature in the afternoon being from 100° to 101.5°. In spite of daily dressings it was impossible to stop the suppuration. Occasionally there would be some burrowing of the pus. The undermined tissues were promptly laid open by incisions as soon as discovered, and the sinuses washed out with hydrogen dioxid and bichlorid solution. The original infection appeared to have been a very virulent one, and the extensive areas of contused tissues offered an admirable culture-ground. About six weeks after the injury the patient began slowly to grow worse. The afternoon temperature gradually grew higher, and his general condition was not so satisfactory. The process at the knee was still slowly improving, and showed nothing to account for the change. A new focus of suppuration was discovered, however, in the bruised tissues about the ankle. This was treated in the same way, being promptly opened up, washed out, and dressed daily. In spite of every effort to check the process, however, it slowly advanced, and finally invaded the ankle-joint and the joints between the tarsal bones. The temperature now reached 104° and 105° in the afternoon. There was profuse sweating and occasional chills. The symptoms of septic intoxication finally became so serious that amputation of the thigh was decided upon in order to save the patient's life. This was done nearly three months after the original injury, and improvement began at once. The temperature became normal for the first time since the accident, the amputation-wound healed readily, and the patient rapidly regained health and strength.

I have given the details of this case rather fully, because in its course and final result it offers such a vivid contrast to the other cases described. Nothing could more clearly emphasize the importance of avoiding infection when possible. The causes of the unfortunate course and termination in this case are to be found, I think, first in the length of time between the injury and the first attempt to cleanse the wound, and, second, in the extensive contusions, which must have diminished the natural resistance of the tissues.

CASE V was a man, forty-three years of age, who fell while running, receiving a fracture of both bones of the left leg. Examination showed a ragged wound over the inner side of the lower third of the tibia, evidently produced by the protrusion of a fragment of bone. There was a fracture of the fibula at the same level. Under ether the limb was thoroughly cleansed, the wound irrigated with mercuric chlorid solution, 1 : 1000, and enlarged sufficiently to open up all pockets and sinuses. A number of small detached fragments of bone were removed, and the wound again thoroughly washed out. There was considerable misplacement of the fragments, and the deformity, though easily reduced by means of traction and direct pressure, recurred readily. The desirability of wiring the fragments together in order to secure accurate position was discussed, but it was finally decided to have an assistant carefully hold the foot in position, aided by an orderly holding the leg above, while the wound was packed with iodoform-gauze and a dressing of sterilized gauze applied. Over this dressing a number of strips of bass-wood splint were strapped with adhesive plaster to maintain the position, while a splint of plaster-of-Paris was applied from the toes to the middle of the thigh. The highest temperature recorded was 99.6°, forty-eight hours after the injury. There was no pain after the second day, and the splint was not cut down for two weeks, when the dressing was found soaked with a dried bloody discharge. On removing the gauze-packing the wound was found clean and beginning to granulate. The position of the fragments was excellent. The wound was washed out with hydrogen dioxid and bichlorid solution, 1 : 5000, repacked loosely with iodoform-gauze, and the plaster-splint reapplied. Two weeks later the dressing was again changed. The patient had complained of some pain, and there was found a considerable discharge from the wound of an unhealthy-looking serous character, as well as some redness and edema about the edges. There was no elevation of temperature, and the general health was unimpaired. The wound was irrigated with hydrogen dioxid and bichlorid solution as before. Some infection being suspected, the wound was packed with gauze soaked in bichlorid solution, a wet dressing of the same applied, and the leg put up in a long Volkmann posterior splint. Two days later the dressing was changed, and all signs of inflammation having disappeared the leg was again put up in plaster. Recovery from this point was uninterrupted. The splint was cut down, the dressing changed, and the splint reapplied about every two weeks until the wound healed, which was accomplished in nine weeks from the time of the accident. Union of the fracture was somewhat delayed, but finally became firm. When seen six months after the injury the man was attending to his business, and had complete use of the limb. He still complained of occasional pain, which he described as "rheumatic," and there is at times some edema of the foot, apparently caused by poor circulation.

Case VI was a man, thirty-five years of age, who was run over by a truck. Examination revealed a comminuted fracture at the middle of the right tibia, with a large wound leading directly to the bone, a fracture of the fibula at the same level, and a simple fracture of the femur on the same side, at one inch above its mid-point. The compound fracture of the leg was treated as already described, straps for a Buck's extension being applied over the dressing, and running as high as the point of fracture in the femur. The entire limb from the toes to the groin was put up in plaster-of-Paris. Union in the tibia was delayed, owing to the extensive comminution, but there were at no time any signs of infection in the wound. Five months after the accident the patient was seen, and the usefulness of the limb found completely restored.

Cases VII to XVI, inclusive, were all compound fractures of the tibia, either with or without an accompanying fracture of the fibula. Each was treated as already described, and all escaped suppuration. A practically perfect result was obtained in every case, the usefulness of the limb being restored in periods varying from seven to twelve weeks.

Case XVII was a man, twenty-seven years old, an alcoholic, who, while intoxicated, was run over by a street-car. There was a ragged, contused wound over the inner aspect of the ankle which exposed a fracture of the astragalus. The tissues were much bruised and torn. The wound was treated as usual, the leg and foot being put up in a plaster-splint. On the second day the temperature was 100.5°, and the patient exhibited the early symptoms of delirium tremens. These disappeared under large doses of strychnin and thirty-grain doses of trional, given to induce sleep. He did perfectly well until the tenth day after the accident, when he complained of a feeling of stiffness in the muscles of the lower jaw. The splint was immediately cut down and the wound examined. It looked well, except for some slight sloughing of the contused edges. It was washed out with hydrogen dioxid and bichlorid solution, and redressed. The patient gradually developed a well-marked typical attack of tetanus, dying a week later in a tetanic convulsion. In the meantime the wound was again opened up and washed out with a saturated solution of potassium permanganate, but without any effect on the course of the disease. This case is of especial interest as showing that, while the original efforts at disinfecting the wound were successful in destroying or rendering inactive the pyogenic bacteria, the tetanus-bacilli escaped.

Case XVIII was a woman, sixty-five years of age, who fell down a flight of stairs, receiving numerous contusions and a compound fracture of the right humerus near the elbow-joint. A ragged wound on the posterior aspect of the elbow opened directly into the joint-cavity and revealed a typical T fracture of the lower end of the humerus, with a chipping off of a small fragment of the olecranon process of the ulna. This last was removed, and the fragments of the humerus were wired together, it being otherwise impossible to maintain them in position. The wound was dressed as described, the arm being put up in a plaster splint, the forearm in a position between pronation and supination, and flexed at an angle a little less than 90°. Although warned of the danger, the patient left the hospital the next day, reappearing five days later, unable to give an intelligent account of her movements in the meantime, and with a temperature of 103°. The skin about the wound was reddened, and there was slight edema, but no pus. The wound was washed out with hydrogen dioxid and redressed, the arm being put up in a right-angled tin splint, and rest in bed ordered. The temperature at once fell, and all signs of inflammation promptly disappeared. A week later the arm was again put up in plaster, and recovery was uninterrupted from this point. In six weeks there was firm union, and passive motion was begun. Three months after the injury flexion and extension were nearly complete and she used the arm in washing and household work.

Case XIX was a man, twenty-eight years of age, who was run over by a cart. A ragged, contused wound on the inner aspect of the arm exposed a comminuted fracture of the left humerus opposite the point of insertion of the deltoid muscle. The wound was treated as usual, the deformity being reduced by making traction on the extended forearm. A plaster splint was applied from the fingers to the axilla and running over the point of the shoulder, the arm being at right angles to the body, and the forearm extended on the arm. There was no rise of temperature, and the wound healed readily. Four weeks after the injury the elbow was bent under chloroform and a plaster splint reapplied, with the forearm flexed on the arm at a little less than a right angle. In nine weeks union was firm and passive motion was begun. Three months after the accident the usefulness of the arm was fully restored.

Case XX was a man, fifty years of age, who was run over in the street, receiving a compound fracture of the left humerus. This case is almost an exact counterpart of the last, and was treated in the same way. In eight weeks the union was firm, the wound had healed, and passive motion was begun. Four weeks later the patient returned to work with full use of the arm.

A review of these twenty cases, taken without any attempt at selection, and comprising all the serious compound fractures treated in the hospital during a period of six months, shows that in eighteen (90 per cent.) a practically perfect result was obtained, without pus appearing in the wound at any time. This ought to be sufficient to banish from all minds the idea that in compound fractures suppuration is inevitable. And this is an idea that, even in this age of antiseptics, is surprisingly prevalent outside of the large medical centers.

The study of these cases leads us to the conclusion that the essentials of treatment are:

I. To cleanse thoroughly and disinfect the wound at the earliest possible moment after the injury, and to keep it in an aseptic condition until it is healed.

II. To reduce accurately the deformity and apply a splint that shall hold the bony fragments in proper position, at the same time giving the parts surrounding the wound that perfect rest which contributes in no small degree to rapid healing.

In accomplishing the first of these aims the following points may be emphasized:

1. The thorough disinfection of the hands of the surgeon.
2. The sterilization of all instruments and dressings.
3. The laying open, by free skin-incisions, of all pockets and sinuses in the wounded tissues.
4. The securing of free drainage by leaving the wound open and packing it with gauze.

Finally, it may be remarked that while the foregoing results were obtained in hospital practice, there are in private practice no special difficulties in the way of carrying out the same treatment and obtaining the same results.

THE THOMSONIAN AND BOTANIC MEDICAL SYSTEMS.

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The Thomsonian medical system arose in the United States early in the present century, attained considerable prominence and popularity for a few decades, largely under the name of botanic medicine, and is now nearly or quite extinct, with the exception of a slightly modified form known as physiomedicalism, which still survives in a few localities. The prominence and influence which the system in its time attained give it a place in the history of medical sectarianism. The subject seems sufficiently profitable and interesting as a matter of medical history and general medical information to warrant this historic and doctrinal review.

Samuel Thomson, the originator of the system, was born in 1769 in Alstead, a country place in Southwestern New Hampshire. He was brought up in the country, had almost no education whatever, and as he grew into manhood engaged in farming. About 1792 he began to doctor, at first in his own family and then among his neighbors. As years passed he developed his medical notions, and his reputation and practice extended. From about 1806 he engaged in itinerant medical practice, travelling about from town to town in Northern New England. In 1813 he obtained a patent on his system, by virtue of which he claimed sole proprietorship and control of it, and made the "right" to use it a simple article of commerce. Under his management Thomsonism was preëminently a system of family medicine and treatment. He taught that food and medicine are analogous, and, growing side by side in the fields, it is as simple and natural for people to prepare and administer their own medicines in disease as to produce food for hunger. A scheme for doing this and the right to use it was what Thomson had for sale; he charged $20 for each invisible right and a little book of instructions, the purchasers agreeing not to divulge any of the information so obtained, and being organized into the "Friendly Botanic Society."

For many years Thomson travelled about, mostly in New England, selling his right, books, and medicines, and overseeing the operations of local agents. With the latter Thomson was usually at loggerheads, due to his selfishness, avarice, and jealousy. The profits from the sale of his twenty-dollar patent book must have been something handsome; his agent for the Ohio Valley and the South, for instance, in 1827–30 sold 4000 copies, representing a gross return of $80,000. About 1822 Thomson published two books on his system, by which its extension beyond the limits of his personal management was facilitated. These were a *Narrative of the Life and Medical Discoveries of Samuel Thomson, Containing an Account of His System of Practice and the Manner of Curing Disease with Vegetable Medicine upon a Plan Entirely New*, partially unfolding the system; and his *New Guide to Health, or Botanic Family Physician*, which contained his autobiography and a complete presentation of the system. These books had a large circulation, and went through many editions during the next twenty years. In 1841 *The Thomsonian Materia Medica, or Botanic Family Physician*, was published, a larger and more pretentious treatise, nominally by Samuel Thomson, but really written by his son John. Samuel Thomson died at Boston in 1843.

From the testimony of contemporaries, and even followers, it appears, as his autobiography indeed shows, that Thomson was an ignorant, illiterate, narrow man, high-handed with others, and of some financial shrewdness. He had practically no education whatever, least of all in medicine; he never attended a medical school or studied under a preceptor. His medical knowledge consisted in the notions picked up by a narrow and ignorant man within the small field of observation of a country neighborhood. He says, for instance, that nearly all his instruction in obstetrics consisted in a twenty-minute conversation with a midwife. One would suppose that such an utter lack of education would have entirely discredited all Thomson's pretensions to medical knowledge and authority.

The Thomsonian pathologic and therapeutic doctrines, as promulgated by their founder and held by his stricter followers, were essentially as follows:

Heat is life and cold is death. Life depends on heat; food and medicine are the fuel of heat, and therefore of life. The process of digestion causes the consumption of food, and thus supports the heat and vitality of the body. The stomach, therefore, is the organ upon whose proper action depends almost entirely the maintenance of heat and health. When the food is not digested properly the production of heat diminishes, the vital powers are depressed, and this constitutes disease. The main indication in the treatment of disease is, accordingly, the clearing out of the stomach and its restoration to proper action; this Thomsonism accomplished by violent emetics.

Heat being the basis of life, fever is a friend and cold an enemy to health. Consequently, from the Thomsonian standpoint, antiphlogistic and antipyretic methods of reducing fever—by bleeding, purgatives, cardiac sedatives, application of cold, etc. —were unnatural, inefficacious, and injurious. All fevers are of the same essential nature, consisting of a decrease of internal and disproportionate increase of external heat, a struggle between the cold and the heat. One of the chief indications of Thomsonian treatment was, accordingly, to promote the fever, or heat, and decrease the cold, for which steam baths and capsicum were the principal agents employed.

The influence of torpidity of the excretory functions, especially of the perspiration, in causing disease was recognized. That all diseases are of essentially the same nature was a doctrine which justified the practice of treating all diseases in essentially the same way.

Thomson had other notions concerning "canker," the vital power, respiration, medieval ideas of the elements (earth, air, fire, water) composing the body, etc., which are beyond ordinary comprehension or have no practical medical bearing.

The Thomsonian therapeutic agencies consisted of a few drugs, mostly arranged in six classes and designated by Thomson (but not so much by his followers) by numbers rather than by name, steam baths, and injections.

Thomson's "No. 1" was emetic medicine. Violent and repeated emesis was practised in nearly all cases of disease, and to this treatment the most beneficial results were ascribed. For this purpose lobelia, the main drug of Thomsonism, was employed in tremendous doses, as high as one-half ounce of the seeds. In the face of repeated fatal cases of poisoning by the drug, and of numerous legal trials to which many of them were subjected for deaths caused by its use in their practice, the Thomsonians insisted that lobelia was a perfectly harmless, innocuous medicine, not under any circumstances poisonous; and they endeavored to explain away the fatalities that occurred under its use, and denounced the assertions of its poisonous nature as malicious slanders. Of this point the following remarkable passage from *Wilkinson's Botanico-medical Practice* (1845), relating to the attitude and opinions of regular physicians concerning lobelia, is a characteristic illustration:

> "Every particle of honesty, goodness, benevolence, and every other Christian virtue and gentlemanly principle was wholly disregarded and swallowed up in their determined, combined, formidable, and unceasing opposition to this innocent plant. Every mean, low, base, insignificant, wicked, ungentlemanly, unfair, Heaven-daring, principle-disgusting, and soul-revolting measure was eagerly and promptly made use of to suppress the expanding and deserved fame that lobelia was constantly acquiring."

"No. 2" was stimulants—capsicum and the like. "No. 3" consisted of astringents, or "canker medicine." "No. 4" was "bitters, to correct the bile and restore digestion." "No. 5" was peach-meats and cherrystones, "syrup for the dysentery, to strengthen the stomach and bowels, and restore weak patients." "No. 6," myrrh, turpentine, and camphor, was "rheumatic drops." Other preparations were nerve-powder, composition, cough-powder, cancer plaster, salve, etc.

Steam baths were one of the main features of Thomsonian treatment; they were universally used, and the highest importance was laid upon their operation.

"Courses of medicine" constituted a prominent method of treatment; these were used as a routine measure in most cases of disease. A course of medicine usually consisted of, first, a steam bath; next, profuse emesis with lobelia; third, an injection to open the bowels; fourth, another steam bath. These courses were repeated indefinitely; they were employed indiscriminately, and extravagant claims were made for their efficacy.

Thomsonism made lofty claims of using only innocuous and gentle medicines, and vigorously denounced bleeding and the use of alleged harsh drugs, like opium, mercury, arsenic, antimony, niter, and other mineral medicines. It styled itself a botanic system, and attempted to create prejudice against the employment of mineral drugs, and cast a slur on regular medicine by calling it the mineral school and charging it with a predilection for using injurious treatment.

Thomsonism first attained popular strength in New England under Thomson's personal management, and was sustained in that region largely by his personal efforts. It achieved a more extensive and more enduring development elsewhere through his agents and the circulation of his books, apart from his personal influence, and by 1830 became widely disseminated through the Atlantic States and Ohio Valley. Thomson held the practice and the followers of his system well under his proprietary control until about 1830. Differences then appeared among his followers, and an element arose which was disposed to renounce his doctrinal and proprietary authority. Thenceforth Thomson's personal influence declined greatly, although the sale of the "right" continued at least as late as his death, in 1843. In its fullest development Thomsonism thus became divided into well-marked elements, differing more in ethics, name, and organization than in principles or practice, namely, (1) strict Thomsonism; (2) the more liberal section, commonly known as the botanic or botanico-medical system, from which developed (3) physio-medicalism, the only form of Thomsonism which continues in existence in America, to any extent at least, at the present time.

The strict Thomsonians, while slightly modifying his methods, professed to follow Thomson's teachings closely, and denounced the innovations and "improvements" of the botanics.

The main body of the adherents of the system, however, rejected Thomson's claims to a monopoly of it, and broke from his control. They generally styled their system the botanic or botanico-medical system; also (later) the reform medical system, and employed these names rather more commonly than the original designation, Thomsonian. They established the schools and journals and produced most of the literature of the system. The difference between their opinions and practice and those of the so-called strict Thomsonians was exceedingly slight; yet the refinements and innovations which they introduced were vigorously denounced by the latter. The main difference lay in organization and ethical methods, in the fact that original Thomsonism was a proprietary system for family and lay practice. Thomson bitterly opposed this element, since it injured his vanity, prestige, and profits.

This more respectable form of Thomsonism arose about 1830, concurrently with eclecticism, with which it was for a time quite closely associated, and was at its height in the United States for two or three decades following. Its greatest strength was in Ohio (also the headquarters of physio-medicalism and eclecticism), Massachusetts, New York, Pennsylvania, Georgia, and the adjacent sections, extending also into Canada. Over this wide territory at the time of its prevalence the system was very extensively diffused, and had quite a strong hold upon the people, especially and mostly in the country and among the lower classes. Botanic medicine had some organization for a time, in State societies, etc., but never secured much legal recognition. Considerable literature devoted to the system appeared, of which empiricism and illiteracy were prominent characteristics. The periodicals of the system were quite numerous, but mostly ephemeral. Of the five or six schools established to teach the system, all except two were short-lived, or after from two to four years of existence adopted eclecticism; these two were the Botanico-medical College of Ohio (the first botanic school), organized in 1839, which became the chief physio-medical educational institution, and the Southern Botanico-medical College of Georgia, organized soon after the preceding, which continued under various organizations and names, and finally merged into an eclectic school.

Botanic medicine was introduced into England about 1848 by the teachings of A. I. Coffin, after whom his followers received the ominously appropriate name of Coffinites. In that country it rapidly attained a large following and very many irregular practitioners or "poisoners," and achieved much notoriety from the frequent cases of fatal lobelia-poisoning, and convictions for manslaughter ensuing. The system survived there longer than in the United States, and probably still lingers to some extent.

By about 1860 botanic and Thomsonian medicine in the United States had lost its schools, journals, literary activity, and many of its adherents, and was on the decline. Much of its strength went over into eclecticism. Its last stronghold was Macon, Georgia, where a Thomsonian journal and college continued as late as or later than 1860. The system has become virtually extinct in its original form, with few if any genuine stragglers still surviving from the past.

Physio-medicalism arose among the botanics about 1840, under the teachings of Alva Curtis; this has continued in existence in some localities under a distinct organization and name.

Concerning the merits of the Thomsonian system little need be said. Thomson's commercial motives and methods of promulgating his practice were simply one with the many quack and patent-medicine enterprises now in operation, and his system would deserve no more notice than any of these except for its influence and bearings upon medical sectarianism in the United States as a matter of medical history. The Thomsonian theories were the crude, illogical, and frequently absurd notions of an absolutely uneducated man, whose entire observation and experience had been limited to the narrow field of a remote country neighborhood, and who was largely actuated by mercenary motives. The partial degree of truth in some of Thomson's ideas was exalted by narrow ignorance and enthusiasm to an exaggerated importance, so that the multitude of other and more important medical facts were lost sight of. The fact that theories and methods such as these, and coming from such a source, should have received general and wide acceptance is an instance of the narrowness which the exaltation of one idea always produces and a commentary upon the gullibility and pervertibility of the human mind. The final extinction of Thomsonism throughout the extensive region where once it was a familiar household word, after undergoing the fullest trial by the world, was simply the inevitable fate of error.

CASES OF DIPHTHERIA TREATED WITH AND WITHOUT THE ANTITOXIN.

BY ROMULUS A. FOSTER, M.D.,
OF WASHINGTON, D. C.,

From the tabulated statements appended it appears:

1. That of 2740 cases of diphtheria—selected and unselected (and which included those that required tracheotomy and intubation)—treated with the antitoxin, only 509 died, or a mortality of 18.54 per cent.

2. That of 4445 cases, which also included those that required tracheotomy and intubation, not treated with the antitoxin, 2017 died, or a mortality of 45.36 per cent.

3. That all the cases recovered in which the antitoxin-treatment was begun on the first day of the disease; that 2.83 per cent. of the cases died in which it was begun on the second day; that 9.99 per cent. of the cases died in which it was begun on the third day; that 20 per cent. of the cases died in which it was begun on the fourth day; that 33.33 per cent. of the cases died in which it was begun on the fifth day; and that 41.38 per cent. of the cases died in which it was begun after the fifth day.

The average quantity of serum administered, hypodermically, was from 1 to 10 cubic centimeters (15 minims to 2½ fluidrams) in mild cases, and from 10 to 25 cubic centimeters (2½ to 6¼ fluidrams) in severe cases.

The injection was made either in the gluteal region or in the back, below or between the shoulder-blades; and if the patient was not better the next day another was given him. The second dose was similar to the first or somewhat smaller. Aronson says that one should not hesitate to give a dose of 50 cubic centimeters (12½ fluidrams) in malignant cases, and Seitz suggests intervals of ten hours between doses. The serum of the immunized horse, Roux claims, is wholly uninjurious to man, even in large doses. Injected under the skin, it is immediately absorbed, without giving rise to any local irritation.

In regard to the employment of the serum as a prophylactic, the following is reported by Hilbert: Of ten children treated with Behring's normal serum, only four contracted diphtheria; of eight treated with the sixfold strength of Aronson's serum, not one contracted the disease; of eighteen treated with the thirtyfold strength of the same serum, two contracted the disease; and of 28 treated with the sixtyfold strength of Behring's antitoxin, one contracted the disease. In the inoculated children who contracted diphtheria the disease pursued a mild

Diphtheria Treated with the Antitoxin.

Reported by	Cases.	Recovered.	Died.	Mortality.	Reported in
Catlin,	1	1	...	...	Medical News, No. 1139.
Brewer,	6	6	...	...	" " No. 1149.
Maclachlan,	1	1	...	...	Brit. Med. Journ., No. 1765.
Mendel,	1	1	...	...	Berl. klin. Woch., 1894, No. 48
Gleason,	1	1	...	...	Medical Record, No. 1253.
Treymann,	1	1	..	...	Deut. med. Woch., 1894, No. 51.
Rembolt,	1	1			
Walker,	1	1	...	...	Lancet, No. 3710.
Macgregor,	1	1	...	...	" No. 3714.
Roué,	1	1	...	...	" No. 3715.
Rice,	2	2	...	...	Brit. Med Journ., No. 1764.
Frith,	1	1	..	...	" " " No. 1766.
Fowler,	1	1			
Schippers,	1	1	..	...	" " " No. 1767.
Simpson,	1	1			
Lees,	1	1			
Phillips,	1	1			
Pérignon,	1	1	...	...	Journ. des Sci. Méd. de Lille, 1894, No. 45.
Hilbert,	11	11	.	...	Deut. med. Woch., 1894, No. 48
Seitz,	27	26	1	3.70	Therap. Monats., 1894, H. xii.
Hager,	25	24	1	4.00	Centralblatt für innere Med., 1894, No. 48.
Fischer,	34	32	2	5.88	Amer. Journ. Med. Sciences, No. 273.
Borger,	30	28	2	6.66	Deut. med. Woch., 1894, No. 48
MacCombie,	30	27	3	10.00	Brit. Med. Journ., No. 1774.
Lebreton,	242	214	28	11.57	Méd. Moderne, 1894, No. 109.
Rumpf,	91	80	11	12 08	Münchener medicin. Woch., 1894, No. 47.
LeGendre,	16	14	2	12.50	La Méd. Mod., 1894, No. 100.
Kuntzen,	24	21	3	12.50	Deut. med. Woch., 1894. No. 49
Aronson,	192	167	25	13.02	La Méd. Mod., 1894, No. 85.
Virchow,	303	263	40	13 20	Münchener medicin. Woch., 1894, No. 50.
Katz,	128	111	17	13.28	La Méd. Mod., 1894, No. 85.
Moisard,	231	197	34	14.71	Le Merc. Méd., 1894, No. 50.
Bokai,	35	30	5	14.30	Lancet, No. 3714.
Herringham,	18	15	3	16.66	Brit. Med. Journ., No. 1773.
Saw,	6	5	1	16.66	Lancet, 1894, No. 3711.
Caiger,	30	22	8	16.66	Brit. Med. Journ., No. 1774.
Sonnenburg,	95	79	16	16.84	Deut. med. Woch., 1894, No. [50.
Washbourne, Goodall, and Card,	72	58	14	19.44	Brit. Med. Journ., No. 1773.
Welch,	5	4	1	20.00	Med. News, Nos. 1140, 1142.
Behring and Kossel,	30	24	6	20 00	La Médecine Moderne, 1894, No. 85.
Caillé,	9	7	2	22.22	Amer. Medico-Surgical Bull, 1894, No. 23.
Roux,	448	339	109	24.30	Wien. med. Presse, No. 38.
Widerhofer,	100	75	24	24 00	" " " No. 52.
White,	32	24	8	25.00	Medical News, No. 1140.
Weilger,	63	46	17	27.14	La Méd. Mod., 1894, No. 85.
Wassermann, Ehrlich, and Kossel,	220	154	66	30.00	Deutsche medicin. Woch., No. 16, xciv.
Von Ranke,	36	25	11	30.55	Münchener medicin. Woch., 1894, No. 45.
Körte,	121	81	40	33.05	Berl. klin. Woch., 1894, No. 46.
Maurice,	2	1	1	50.00	Lancet, No. 3713.
Romer,	1	...	1	100.00	" No. 3715.
Browne,	8	2	6	75.00	Med. Press & Circ., No. 2905
Wakeling,	1	...	1	100.00	Brit. Med. Journ., No. 1766.
Totals,	2740	2230	509	18 54	

course and terminated favorably. It is also reported that of seventy-two brothers and sisters of affected children to whom a small dose was given, only eight were attacked with diphtheria; and that of thirty-eight brothers and sisters of patients to whom a larger dose was given, all escaped. Those who received the antitoxin were rendered immune to the disease in a very short time, but it was found that the immunity was not permanent; that it disappeared after a few day or weeks. For preventive inoculation 150 antitoxic units are now recommended; that is, from 2 to 3 c.c. (30 to 45 minims). The serum cured all the cases of diphtheria associated with staphylococci, but only 65.72 per cent. of those associated with streptococci. The latter were found to be especially dangerous.

DIPHTHERIA TREATED WITHOUT THE ANTITOXIN.

Reported by	Cases.	Recovered.	Died	Mortality.	Reported in
MacCombie,	54	47	7	12.96	Brit. Med. Journ., No. 1774.
Borger,	223	177	46	20.62	Deut. med. Woch.. 1894, No 47
Sonnenberg,	116	84	32	27.50	" " " " No. 50
Washbourne, Goodall, and Card,	797	487	310	38.89	Brit. Med. Journ., No. 1773.
Ehrlich,	41	23	18	43.09	Med. Press & Circ., No. 2894.
Katz,	86	48	38	44.18	Lancet, 1894, ii.
Körte,	1266	685	581	45.10	Berl. klin. Woch., 1894, No. 46
Virchow,	230	120	110	47.82	Deut. med. Woch., 1894, No 50
Von Ranke,	1112	553	559	50.26	Münchener medicin. Woch., 1894, No. 45.
Roux,	520	204	316	60.77	Wiener med. Presse, 1894, No. 38.
Totals,	4445	2428	2017	45.36	

DIPHTHERIA TREATED WITH THE ANTITOXIN ON 1ST, 2D, 3D, AND OTHER DAYS.

1st day.			2d day.			3d day.			4th day.			5th day.			After 5th day.		
Cases.	Cured.	Died	Cases.	Cured.	Died.	Cases.	Cured.	Died.	Cases.	Cured.	Died.	Cases.	Cured.	Died.	Cases.	Cured.	Died.
6	6		66	64	2	29	25	4	39	30	9	23	13	10	7	3	4
2	2		6	6		7	6	1	2	2		2	2		8	5	3
20	20		4	4		1		1	9	8	1	11	9	2	7	4	3
1	1					29	29								1		1
1	1		30	29	1										6	5	1
14	14																
44	44		106	103	3	66	60	6	50	40	10	36	24	12	29	17	12
Mort.	0			2.83			9.99			20.00			33.33			41.38	

It should be borne in mind that the serum has a destructive effect on the red blood-corpuscles, and that the following secondary effects have been observed in a few of the cases treated with it: Erythema multiforme; an urticarious eruption associated with malaise, glandular enlargement, and paresthesia; pains in knee-joints, ankle-joints, and elbow-joints, and swollen and reddened ankle-joints; a purpuric condition. The secondary effects, however, did not last longer than several weeks.

Although some of the cases which showed a decided improvement in the first two days became gradually worse, and died later of nephritis and cardiac paralysis, it is claimed that these complications in diphtheria are rendered less frequent by the serum or antitoxin treatment.

2029 Q STREET, N. W.

BACTERIOLOGIC EXAMINATION IN THE DIAGNOSIS OF DIPHTHERIA.[1]

BY WILLIAM G. BISSELL, M.D.,
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A GREAT deal has been said on the laboratory-technique and the value of bacteriologic examination in the diagnosis of diphtheria, yet the subject is of sufficient interest and importance to warrant a further explanation of the methods used in culture-examinations. It would seem unnecessary to go into the history of the organism further than to state that it was discovered by Klebs in 1883, and first artificially cultivated by Loeffler in the year following. The germ is generally known as the Klebs-Loeffler diphtheria-bacillus, and it has been fully proved to be the etiologic factor in the production of the disease.

It is generally admitted by all clinicians of experience that it is often impossible to make an accurate diagnosis of diphtheria, either from the clinical history, the anatomic lesion, or from both. There are no constant differences that separate the simple non-contagious forms of inflammation from the diphtheric type, and it is in but a very small proportion of cases that an early and reliable diagnosis can be reached from any data obtainable. This was conclusively demonstrated in the examination of the cases of suspected diphtheria under treatment at the Willard Parker Hospital in New York, where the diagnoses were made by department diagnosticians and confirmed by the best medical talent. Subsequent bacteriologic examination in these cases revealed that from 30 to 50 per cent. were not diphtheria, but maladies of non-infectious character. Appreciate sending a case of follicular tonsillitis to a hospital and having it placed in a ward with diphtheric patients! This person, with a reduced vitality, is exposed to one of the most dreaded diseases when suffering from a malady to which hardly one in twenty-five succumbs.

a. It is in just such cases that an early bacteriologic examination is of the greatest sanitary importance.

Furthermore, it has been proved that in cases in which the Klebs-Loeffler bacillus has been found virulent diphtheria has been transmitted to others, whereas the person carrying the contagion was hardly in a condition to be called ill.

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[1] Paper read before the semi-annual meeting of the Erie County Medical Society, January 8, 1895.

b. It is the systematic bacteriologic examination of such cases that plays a most important part in the advancement of preventive medicine.

Again it has been fully demonstrated that the bacillus of diphtheria remains a varied length of time in the throats of persons convalescing from the disease, even after the disappearance of all membrane and constitutional symptoms. Such persons, if allowed to go at large, are a constant source of infection, transmitting the disease to others, and in this way increasing the prevalence of the malady.

c. It is from the bacteriologic examination in such cases that the greatest practical benefits can be derived.

Early in January, 1893, through the energetic efforts of Dr. Herman M. Biggs, of New York, a communication was addressed to the Health Board of that city, recommending systematic bacteriologic examination for the diagnosis of diphtheria. After some unavoidable delay, bacteriologists were appointed in accordance with the recommendation, with such assistance as was necessary thoroughly to carry on the work. From the time of the inauguration of this scheme those in charge had very little doubt of its ultimate success, but there were a few who doubted its practical efficiency. Several depots were established in various parts of the city, where culture-sets could be procured, and every step was taken to increase the facilities for early examination. Circulars were printed and sent to physicians, asking their hearty co-operation in the movement, and explaining the great necessity for such examinations. During the first few weeks the cases examined were comparatively small, but they have continually increased in number until at the present time the practice is universal.

In order to make clear the methods used in such examination it will be necessary to describe briefly the materials required. The culture-medium most suited for this work is a preparation of blood-serum after the formula of Loeffler. Pure serum is obtained by allowing the freshly drawn blood of a young sheep or ox, contained in a wide-mouthed sterile jar, to remain twenty-four hours in an ice-chest. By that time the fluid part of the blood has separated from the solid portion, and is easily drawn off by means of a pipet. This serum is mixed in proportions of three to one of a 50 per cent. neutral sterile beef-infusion, containing 1 per cent. peptone, 1 per cent. dextrose, and ½ per cent. of common salt. This mixture is then poured into small sterile tubes (putting about 2 c.c. in each tube) and carefully sterilized in a blood-serum sterilizer, at a temperature of about 160° F. The tube is put at an angle during the process of sterilization so that after the coagulation of the blood-serum mixture one will have the greatest possible surface for the planting of bacteria. After these tubes have been rendered absolutely sterile they are ready for use. A sterilized tube containing a swab goes with each culture-tube, and these tubes compose the so-called culture-set.

How to make the primary inoculation is explained by a printed slip accompanying each culture-set. The slip, as supplied by the Department of Health in this city, reads as follows:

DIRECTIONS FOR MAKING CULTURES IN CASES OF SUSPECTED DIPHTHERIA.

The patient should be placed in a good light, and, if a child, properly held. In cases where it is possible to get a good view of the throat, depress the tongue and rub the cotton swab gently, but freely, against any visible exudate.

In other cases, including those in which the exudate is confined to the larynx, avoiding the tongue, pass the swab far back, and rub it freely against the mucous membrane of the pharnyx and tonsils. Without laying the swab down, withdraw the cotton plug from the culture-tube, insert the swab, and rub that portion of it which has touched the exudate gently but thoroughly back and forth over all the surface of the blood-serum. Do not push the swab into the blood-serum, nor break the surface in any way. Then replace the swab in its own tube, plug both tubes with the cotton plugs, and return the culture-set at once to the Health Department.

A report will be given by telephone the following morning, or can be obtained after 12 noon.

As soon as the tubes arrive at the department, that containing the inoculated blood-serum is placed in the incubator at a temperature of 36° C., and allowed to remain until sufficient growth appears to permit of examination. This requires a period of from twelve to twenty-four hours. After the proper time has elapsed a cover-glass preparation is made from the growth in the tube, stained with alkaline methylene-blue solution, and mounted in the usual way with Canada balsam. On microscopic examination of such a preparation with a 1-12 oil-immersion lens—if it is from a case of true diphtheria—the following picture will present itself: A large number of rod-shaped organisms stained blue, varying somewhat in length, about the same size as the tubercle-bacillus, but twice as thick, frequently clubbed and spindle-shaped, and almost invariably irregularly stained, presenting heavily stained segments in a lightly stained background. This is the bacillus of diphtheria.

It is claimed by some that the recognition of the bacillus is extremely difficult, owing to its resemblance to the germ described by Hoffman. It is the general opinion, however, that with thorough examination of the bacterial growth, as described, which has been carefully inoculated according to the rules given, and kept at the temperature of the body, the microscopic examination can be, without doubt, relied upon. Of course, the majority of tubes sent in for examination will not reveal any bacilli, containing simply the common cocci found in the throat. In such cases a positive diagnosis is extremely easy. It was thought at one time that the size of the germ had to do with its virulence, but this is now generally conceded not to be the fact.

Much has been said by some authors as to an organism that by its culture-peculiarities and microscopic appearance is identical with the Loeffler germ, yet does not possess pathogenic properties when injected into susceptible animals. The name given to the organism is the "pseudo-diphtheric bacillus," and, as expressed by Abbott and other prominent workers in this field, it seems certainly to be a misnomer, for it is most possible and probable that this organism is none other than the true diphtheric germ, attenuated in virulence, or, as circumstances have rendered it, a non-virulent diphtheric bacillus.

It would appear to be far better to term "pseudo-diphtheric" those organisms that are enough like the true bacillus to attract attention, yet are distinguishable from it by certain morphologic and cultural peculiarities aside from the question of virulence.

It is a well-known fact that many pathogenic organisms, conspicuous among them being the micrococcus of sputum-septicemia and the so-called hemorrhagic septicemic group, undergo marked variations in the degree of their pathogenic properties, yet such organisms are not designated as "pseudo," but simply the organisms themselves, having become attenuated in virulence.

Loeffler, himself, found the Klebs-Loeffler bacillus present in the case of a perfectly healthy child. Was the germ found virulent? Was it the germ of true diphtheria, or was it the resistance on the part of the patient, the healthy secretions and conditions of the mucous membrane, which lessened its virulence in this particular case? It seems most reasonable that it was the latter. If not, why is it that frequently, on examination of cultures made from the throats of persons taking care of diphtheric patients, one finds the germ present, and yet these persons present no constitutional disturbance. It is because the proper conditions are not present for the development of the disease, whereas others receiving the infection from an attendant might contract the disease in its most deadly form.

There happens in a certain number of cases which clinically are diphtheria, that the first inoculation will fail to show any diphtheria-bacilli. These cases, however, are exceptional, and it is not usually the fault of the bacteriologist that such is the case, because there are certain factors that should be taken into consideration:

1. The inoculation may have been made at so late a period in the disease that it is possible that the diphtheria-bacilli, though now absent, were present at an earlier time.

2. The growth on the culture-medium may be so scanty that it is probable that the inoculation was not properly made, or that some antiseptic had been applied to the throat shortly before obtaining the material for inoculating the tube, sufficient of the antiseptic remaining to prevent growth on the serum.

3. The culture-medium may be badly contaminated and a positive recognition of any one organism be impossible.

4. The serum in the tube may have become too dry before the inoculation to permit of the growth of the diphtheria-bacilli.

In all these cases a second inoculation should be requested by the bacteriologist before giving a definite opinion as to the diagnosis.

Of the primary cultures examined at the Health Department in this city since the 1st of March, 1894, sixty-five were found to contain the Klebs-Loeffler bacillus and ninety-nine were found not to contain that organism. This makes a showing that about 39 per cent. of the cases were true diphtheria.

One case examined during that time of peculiar interest was that in the practice of Dr. Eugene Smith, of this city. Dr. Smith on the 18th of December, 1894, inoculated a tube from the pharynx of a child suffering with a malady characterized by great toxic disturbance, and, as he thought, possibly diphtheria. The tube was sent immediately to the Health Department and placed in the incubator. After twenty-four hours there was no apparent growth on the blood-serum, and a second inoculation was requested. The result of the second inoculation was like that of the first, there being no apparent growth after the twenty-four hours in the incubator. On microscopic examination of the swab it was found to contain a considerable amount of a glistening whitish exudate. Two side-mountings were made of this exudate, one being stained with methylene-blue, and the other by Gram's method. On microscopic examination of these slides there was found to be present an organism having a distinct encapsulation and resembling morphologically the organism described by Fraenkel as being the etiologic factor in the production of pneumonia. The result of the examination was communicated to Dr. Smith. That night the child developed characteristic pneumonic symptoms, and is now convalescing from the disease. The primarily inoculated tubes were left in the incubator, and after the fifth day showed a growth consisting of several small clusters of isolated fine points, growing closely side by side, like those of the diplococcus of pneumonia. Some of the exudate from the swab was inoculated into several mice, and the animals died invariably inside of forty-eight hours of an acute septicemia.

All these points tend to show that the organisms found correspond with the Fraenkel germ, and it is of interest in that it fully explained why development did not occur on the blood-serum during the first twenty-four hours.

As to the points, in conclusion, which may be definitely stated, in relation to the bacteriologic examination in the diagnosis of diphtheria, there are the following:

1. A positive diagnosis of diphtheria can be reached in the majority of all suspicious cases by careful examining of the primary culture, inoculated as described, inside of twenty-four hours.

2. In cases in which the bacillus is not found there is little chance of infection.

3. In those cases in which the diphtheria-bacilli are found the cases should not be considered free from infective powers until subsequent bacteriologic examinations fail to reveal the organism.

Note.—During the discussion of this paper by various members of the Society an elderly and trusted physician brought up the old-time question as to whether diphtheria is primarily a local or a constitutional disease. He stated that he "believed that primarily it was always a constitutional disease, with perhaps sometimes coincident local manifestations," *i. e.*, it was always the result of etiologic factors from within the body, and not a primary local affection.

With others I strongly contested this idea, and a heated argument ensued. Bacteriologists and men of experience should discuss this question in the current literature.

186 Allen Street.

LOCAL OR GENERAL TREATMENT IN GONORRHEA?

By J. HENRY C. SIMES, M.D.,
of Philadelphia, Pa.

Those who have given any attention to the treatment of gonorrhea cannot have failed to notice that during the past year or two there has been a tendency for surgeons to advocate the internal treatment and to discard the local treatment. This has impressed me as being very singular, when taken in connection with the views advocated as to the nature of the affection, and I am not able to reconcile the one with the other. All, with very few exceptions, are now advocates of the theory that the affection is of a local nature, having for its etiologic factor a local irritant. Such being the case, one naturally is astonished to find that the treatment of the lesion has taken a direction contrary to that which the pathology of the disease would seem to indicate. That is to say, does it not seem more reasonable—indeed, is it not one of the first principles of treatment, to remove the cause, and to accomplish this as rapidly as possible? Therefore, if it is admitted that the lesion is not only local, but also dependent upon a local cause, and the location is amenable to local treatment, is it justifiable to neglect the local and adopt the internal or general treatment?

Before answering this question it is not to be forgotten that gonorrhea, like all the acute contagious diseases, has a certain course to run, and tends to recovery, but also, like this class of affections, it is more or less modified by treatment, which may lessen its duration and prevent complications; therefore, the recovery of the patient is not always to be credited to the method of treatment; rather in many cases the disease is cured in spite of the treatment.

As to the employment of internal treatment in gonorrhea, and the condemnation of local treatment, I find that, in the majority of cases, it is stated that the latter method is more likely to occasion some complication, and in this way lengthen the duration of the attack, while the former is said to be free from this objection. To say that any method of treatment in a case of gonorrhea will or will not be followed by some complication would, indeed, be very foolish, as there is no disease in which the prognosis is so very uncertain, not so much on account of the method of treatment adopted, but more on account of the treatment the patient himself has, contrary to advice, adopted. This aside, however, it remains to be asked, Does the local treatment, the method by injection, in gonorrhea tend to occasion complications? My experience has most certainly taught me that it does not; but its abuse may, and undoubtedly will give rise to complications the same as the abuse of internal remedies will also cause complications. The mucous membrane lining the urethra is a very delicate structure, and it is to be treated with much care, especially when in an inflamed condition; therefore, the object should be to allay all irritation, and make no application that may possibly increase its irritability. If this is always remembered when treating a case of gonorrhea, there may be no anxiety as to the method of treatment giving origin to any complication. Again, it is important to remember that the strength of the injection is not always to be the same for all cases, nor the same for all stages of the attack, nor is the same medicinal remedy admissible in all cases, or during all stages of the same case, but must vary according to the judgment of the surgeon.

Those who advocate internal treatment in cases of gonorrhea very justly claim that this method is not in truth a general method of treatment, but a local one. This must be admitted; it is local to the extent of the medication being secreted by the kidneys, and of its being mixed with the urine. Thus the medicated urine is a local application to the affected part of the urethra. Notwithstanding this fact, is it not a very roundabout way to accomplish what can be done in a much more satisfactory manner by a direct application to the diseased part? If a somewhat analogous treatment of the same affection, when it attacks another organ of the body, were adopted by the surgeon, the result would be most disastrous. I refer to the treatment of a case of gonorrheal ophthalmia, in whch the neglect to adopt a local method of treatment would certainly not result in adding to the reputation of the surgeon, and the uncontrolled progress of the disease would most probably occasion destruction of the organ. We have the same disease attacking similar anatomic structures, viz.: gonorrhea and a mucous membrane, and experience has taught in one that the best results are obtained by local therapeutics, while in the other there remains a doubt. To my mind such a doubt ought not to exist. If the local treatment of a case of gonorrheal ophthalmia is found to control the disease and prevent destruction of the organ, and to do this more quickly and more certainly than any other method, why is not the same method applicable to the same disease when it attacks the mucous membrane of the urethra? That the anatomic relations of the two organs are not analogous is undoubtedly true, but their anatomic structure is very nearly analogous, and a method of treatment that is admitted to be most efficient in one should be, and for myself is, applicable for the other.

The internal treatment of gonorrhea, it must be admitted, has a controlling and beneficial effect over the disease. It is a method to be recommended, and one that will show good results; but the local method by injections I have found superior in its results, and it is certainly more reasonable when the nature of the lesion is considered. Many surgeons have come to the conclusion that both methods are to be recommended, and that a combination of the two is the most desirable method of treatment. There is, of course, no objection to adopting this plan, except, I think, that one thus uses unnecessary medication, which is always to be avoided, and he may in very many cases occasion the patient considerable discomfort by the administration of internal remedies, as the drugs that are given in these cases are, as a class, most disagreeable to the taste, and frequently disagree with the digestive organs. Further, and most important, is the fact that the effect upon the disease by this double method of therapeutics has not, in my experience, been in any way of advantage; the duration of the attack has not been shortened and a modification of the symptoms has not been noticed.

It is to be understood that in advocating the local treatment of gonorrhea I do not propose to exclude entirely internal medication. Laxatives, diuretics, alkalies, all have their place, and are very valuable adjuncts; but it is to the employment of the so-called specifics, and the neglect to use proper local applications, that objection is made.

2033 CHESTNUT STREET.

CLINICAL MEMORANDA.

A CASE OF LATE SYPHILIS SHOWING UNUSUAL LESIONS OF THE SKIN.

BY J. ABBOTT CANTRELL, M.D.,
OF PHILADELPHIA, PA.;
PROFESSOR OF DISEASES OF THE SKIN IN THE PHILADELPHIA POLYCLINIC AND COLLEGE FOR GRADUATES IN MEDICINE, DERMATOLOGIST TO THE PHILADELPHIA HOSPITAL AND TO THE SOUTHERN DISPENSARY.

THE appearance of syphilis of the skin, especially when this occurs in the later stages of the disease, the so-called tertiary period, is likely to be manifested so often in very peculiar or even grotesque forms that it is just as likely to resemble some other disease of the skin as the one that has been the real cause of its appearance, and so much does this affection vary that I believe the record of such a case will be appreciated.

The patient, a female, forty years of age, presented herself for treatment at my dispensary service, at the Philadelphia Polyclinic, on the 27th day of March, 1894. She stated that the eruption had existed for the previous seven years, and that it gave her no trouble other than by its appearance. Her family history, as well as her own personal history, seemed to be very fair, and she, furthermore, did not remember ever having had the initial lesion of the disease. The woman was married at the age of twenty-three years, and is the mother of three living and healthy children, all of whom have remained in good health to the present day. Their ages are fourteen, twelve, and nine years respectively. She furthermore affirmed that she had never miscarried, and that the previous births were all natural in delivery, and that she had had no trouble after the births.

The lesions, nine in number, were situated on the extensor surface of the right forearm, and scattered at irregular intervals between the elbow and three inches above the wrist. At the examination the arm was placed with the elbow in the patient's left hand, and the hand of the affected arm at the right shoulder. The first lesion to be described was three inches from the wrist, and was situated with the median line of the forearm running through its center, the lesion extending to within about three-quarters of an inch of either border of the forearm, measuring in itself from one end to the other about one-and-one-half inches, and was shaped like a sickle, the blade being toward the radial side of the forearm, and about one-and-one-half inches long on the curve of its upper border, and from one-eighth to one-quarter of an inch wide. The "handle" was on the ulnar side, and about three-quarters of an inch long, and from one-quarter to three-eighths of an inch in width, taking a downward course toward the inner border of the forearm. At the highest point of the curved portion a fissure ran directly across the lesion, from which a slight discharge of pus was noticeable; the borders of the fissure were irregular.

The second lesion was directly below the first, with about one inch of healthy skin intervening. It was irregularly crescent-shaped; measuring from the highest point to the lowest, it was about one inch in length, and one-eighth inch in width. Its lower half comprised the larger portion, being three-eighths of an inch in width and one-half inch in length across the forearm. From the ulnar side of this lower portion it took an upward course, curving around toward the radial side for a distance of three-quarters of an inch, and was from one-eighth to five-sixteenths of an inch in breadth.

The third lesion was circinate in character, and was diseased throughout, being one-half inch in diameter. It was located on the radial side of the forearm, and about one-half an inch from the median line, and one inch from the outer border of the forearm.

The fourth lesion was parallel with the third, and was the largest and most irregularly shaped of all. It began at a point marking the radial side of the forearm and about five inches from the elbow, running diametrically toward the wrist for about three-eighths of an inch, and being from one-sixteenth to about one-eighth of an inch wide. At this point it widened out and ran horizontally across the forearm for about one-and-five-eighths of an inch, being three-eighths of an inch wide at the beginning of the latter portion (at which point was situated a large tubercle, fissured horizontally) and abruptly diminishing in breadth to from one-eighth to one-quarter inch for its entire remaining length. At the point ending the described portion, which was one-quarter inch from the border of the forearm, the lesion extended obliquely downward and inward toward the median line of the forearm for a length of one-and-one-eighth of an inch, then turned upward and pursued its course obliquely toward the median line for five-eighths of an inch to within one-half inch of its beginning point. The tissue was seemingly healthy and almost enclosed within the described lesion.

The fifth lesion, which was pear-shaped, and lying horizontally, with the apex toward the median line, was two inches below the third lesion and three-quarters of an inch from the median line. It consisted of two tubercles, one five-eighths of an inch in diameter, ovoid in shape, and one one-quarter of an inch in diameter and circinate; they were joined together, the smaller one being toward the median line.

The sixth lesion was one-quarter inch from the head of the ulna, and the same distance from the outer border of the forearm, its lower edge being parallel with the center of the head of the ulnar, and somewhat semicircular in shape. The point nearest the ulna consisted of one large tubercle, ovoid in form, and about three-eighths of an inch long. From the lower part of this tubercle it curved outward, upward, and inward for a distance of about one inch, forming the remainder of the semi-circle and being one-eighth of an inch in width and quite irregular in form.

The seventh, eighth, and ninth lesions were on the ulnar side of the forearm and slightly above the elbow, and one-quarter of an inch from the outer side. They were discrete, although the lesion nearest the inner side of the arm was apparently made up of two lesions that had coalesced. These three lesions were each in itself a tubercle varying from one-eighth to one-quarter of an inch in diameter.

PROLAPSE OF THE LARYNGEAL VENTRICLE.[1]

By WILLIAM S. JONES, M.D.,
of Camden, N. J.;
Chief of Laryngological Department of the Jefferson Medical College Hospital.

The orifices of the ventricle of the larynx are situated between the ventricular bands and the vocal bands, and extend nearly the whole length of the latter. The sac of the ventricle extends upward between the ventricular band and the thyroid cartilage. Its depth varies greatly in different persons. The position of the ventricle is such that there is only a very little strain upon it, even in violent coughing, and probably a person, to have a prolapse from any cause, would have to be in a weakened or neurotic condition producing a relaxation of the muscles and mucous membrane of the larynx.

Mr. R. S., aged thirty-five years, consulted me regarding an impairment of his voice, of four months' duration. On inquiry I found that his family history was not very good, one brother having died of lung-trouble, the family generally being neurotic and the patient particularly so. No other constitutional or acquired disease was manifest. As to the cause of his dysphonia, I found that while attending a game of ball, at a critical point in the game, his favorites gaining an advantage, he arose from his seat in an excited condition and shouted at the very top of his voice. In a few minutes this yell was repeated. At once he noticed a slight impairment of his voice. This was due to a congestion of the vocal bands, for in a few minutes his voice was in a normal condition. In about two weeks from this time he again noticed a slight hoarseness, and as time advanced his dysphonia gradually increased. On examining the larynx I found a large mass, light red in color, situated just above the vocal band of the left side and resting on it. At the posterior and inferior portion of this mass there was noticed a very tenacious piece of mucus, held in position by the pressure of this mass on the band. This was removed. Never having seen an obstruction of this kind, I was in great doubt as to the diagnosis. The only symptom was dysphonia. Here was a large mass unilateral in location, and without surrounding inflammation or infiltration, and free from ulceration. So the idea of it being syphilitic or tuberculous was discarded. The color and smooth surface excluded angioma and papilloma. The broad base was against the theory of myxoma. Its position, shape, and color did not point to malignancy. It was only after several examinations that I concluded that this could only be a prolapse of the laryngeal ventricle.

In looking up the literature on this subject (of which there is nothing definite), among the few cases I find one reported by Prof. J. Solis-Cohen, and in consultation he confirmed the diagnosis.

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[1] Read before the Camden District Medical Society, November 13, 1894.

Now, why was the dysphonia so long in following the cause, if the cause was his hallooing at the game of ball? The ventricle is held in position by the thryoarytenoid muscle assisted by the attachment of the connective tissue. If its connection with this muscle was severed during a violent strain, the only remaining support would be the attachment of the connective tissue, which would gradually give way with a continued use of the voice until there was a complete prolapse. This would account for the impairment of the voice occurring some time after the cause, also for the increasing dysphonia.

Knowing the cause of this trouble, what is the best treatment? If the ventricle would remain in its normal position, replacement would be the proper procedure. But the condition of its former attachments would be such after four months of displacement that, if reduced, there would be no support to keep it in its normal position. In fact, I have replaced this mass a great many times, only to find that it would return as soon as pressure was removed. The only thing that will restore the voice seems, therefore, to be the removal of the obstruction. This can be done in several ways. The quickest would be by thyrotomy. This the patient objects to. Continued applications of caustics would remove it. The snare might be used in some cases. The cutting laryngeal forceps would also answer.

The treatment I adopted was the electric cautery. I used an electrode made especially for this case, with a shield on the left side to protect the ventricular band. This electrode was placed on the mass at a dark-red heat, and was held there by a slight pressure usually until the patient gagged. This was repeated several times at each visit, under the use of cocain. At first a 10 per cent. solution was used; but this did not have the desired effect, so a 20 per cent. solution was used, which gave the patient perfect control of the larynx. The man's voice now is almost normal. His aphonia has gradually disappeared, and only when he sings is there a slight impairment of the voice.

201 BROADWAY.

A CASE OF DIPHTHERIA TREATED WITH THE ANTITOXIN.

BY CARL FRESE, M.D.,
OF PHILADELPHIA.

THE following case of true diphtheria was treated by the early administration of Behring's antitoxic serum, and the disease ran a remarkably rapid and favorable course.

H. S. G., twenty-three years of age, a male, had felt unwell for three days, with headache and slight pain on swallowing. He was seen by Dr. A. Hand, Jr., on January 15, 1895, at 10 A.M., who found the temperature 99.4°, pulse 85, and the face slightly flushed. The man complained of pain on swallowing. Examination of the throat revealed small patches of membrane on the pharynx behind both pillars of the fauces. The right tonsil was covered uniformly with a smooth, yellowish membrane. The breath was exceedingly offensive. The gland below the angle of the jaw on the left side was painful and enlarged; that on the right side was tender only. From bacteriologic tests Dr. A. C. Abbott reported on the 15th, at noon, that he had obtained a pure culture of Klebs-Loeffler bacilli.

On the afternoon of the 15th the temperature had risen to 102°, the pulse was 105; there was violent headache, the face was very flushed, there was great nervous depression, and thick membranes existed on both tonsils. Six-hundred normal antitoxin-units of Behring's serum were injected in the hypogastric region at 5 P.M. Just before the injection another culture on blood-serum was taken, and this, after twenty-four hours, was shown to be a pure culture of Klebs-Loeffler bacilli. No change was observed late at night except that the headache had abated a little. On the 16th, in the morning, the membranes were about the same, though the general condition was much better. The temperature was now 99°. In afternoon improvement was marked, the tonsils being devoid of membrane, and on the pharynx only a few little patches persisted. On the 17th the general and local symptoms showed still more improvement, and on the 18th the patient was apparently cured, the tonsils and pharynx being quite free.

The patient had given the impression as of a severe infection and grew rapidly worse until a few hours after the injection of the antitoxin, which seems therefore to have arrested the further development of the disease. The bacteriologic report from two independent sources (University of Pennsylvania and German Hospital Bacteriologic Laboratories) make the diagnosis of true diphtheria absolute.

A friend rooming with the patient felt unwell on the 15th and complained of soreness of the throat, which was very red, but had no membranes. In the afternoon ten drops of Behring's serum were injected. This gentleman nursed his friend night and day, and although he was run down, he developed nothing further, and his sore-throat disappeared a day after the injection. It seems very probable that this patient was immunized by the small dose administered.

No swelling or symptoms of inflammation developed in either case at the point of injection. Local tenderness persisted for two days in the second case, while in the case of developed diphtheria it disappeared within twelve hours.

GERMAN HOSPITAL.

PATHOLOGIC NOTE.

DIMINUTIVE LIVER FROM AN INFANT.[1]

BY AUGUSTUS A. ESHNER, M.D.,
ADJUNCT PROFESSOR OF CLINICAL MEDICINE IN THE PHILADELPHIA POLYCLINIC.

THE liver that I have the privilege of presenting has been placed in my hands by Dr. R. E. Müller, of this city, who has also kindly furnished me with such clinical and pathologic data as were attainable. The specimen came from a male infant delivered at term with forceps, after a labor lasting forty-eight hours, and weighing seven pounds one ounce at birth. The mother was a German, thirty-two years old, with a justo-minor pelvis, who had led a dissolute life for many years, but denied that she had ever previously been pregnant. She had been in the habit of lacing tightly, even during the pregnancy. There was no history of syphilis or tuberculosis. For the first two days of life the infant was fed on sugar-water, as the mother was unwilling to put it to breast on account of sore nipples. On the third day the child was given the breast, but it refused to nurse. It was then fed with sterilized milk sweetened with milk-sugar. Forty-eight hours after birth the face and chest of the child were observed to be icteric, and soon afterward the conjunctivæ and the extremities also. An effort was made to collect the urine for study, but without success. The stools had a greenish color on the second day. The child wasted rapidly, and died on the eighth day of life. The umbilical cord had been carefully ligated, and the ligature had not fallen off.

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[1] Presented to the Philadelphia Pathological Society, January 10, 1895.

At the post-mortem examination it is said that no abnormality was found, save the general icteric discoloration of the tissues and the diminutive size of the liver. The ductus venosus was patulous. The dimensions and weight of the organ were not noted at the time of its removal, but after having been preserved in alcohol for some time the transverse diameter was found to be 3½ inches, the antero-posterior diameter 2¾ inches, and the vertical diameter 1⅜ inches; the weight was two-and-one-quarter ounces.

The specimen appears to me a unique one. I have been unable to find a reference to a parallel observation. In conformation, in fissuration and lobulation, and in histologic structure it presents the appearances of a normal viscus, its only peculiarity, so far as I can discern, consisting in its striking diminutiveness. Malformations of the liver are said to be, on the whole, rather uncommon. Ziegler states that the liver may be entirely absent, though rarely. Although the liver progressively increases in size from the period of its first appearance in the process of development, its relative size, as compared with the weight of the body, begins early to diminish gradually and progressively. Thus, in the first month of fetal life the weight of the liver represents one-half of the entire weight of the body; at birth the ratio is 1 : 18 or 20, and in adult life from 1 : 36 to 40. In the specimen presented this ratio is 1 : 50. I have been unable to obtain any satisfactory figures as to the dimensions of the liver at various periods of development. At birth the organ is said to extend almost to the level of the umbilicus. The average figures for the adult liver are: For the transverse diameter, 11 inches; for the antero-posterior diameter, 7 inches; and for the vertical diameter, 2.5 inches. The weight of the adult liver is from fifty to sixty ounces. In this specimen the right lobe is the larger, as it should be normally at birth and thereafter. Until the fourth month of fetal life the two lobes are of about equal size, but after this the left is the smaller. The comparatively large size of the liver in the fetus is ascribed to the large supply of blood sent through the organ from the umbilical vein.

I am at a loss for an explanation of the abnormality of size in the specimen presented. I am scarcely willing to make the tight lacing the active factor.

The Fifth District Branch of the New York State Medical Association will hold its eleventh annual meeting in Brooklyn on May 28, 1895. All Fellows desiring to read papers are requested to notify the Secretary, Dr. E. H. . O. Box 760, Brooklyn.

MEDICAL PROGRESS.

On Local and General Immunity.—As the result of an investigation based upon experimental erysipelas in animals, together with some observations on the mode of growth and the life-history of the *Streptococcus erysipelatis*, Cobbett (*Journal of Pathology and Bacteriology*, vol. iii, No. 1, p. 38) has found that cultures of the streptococcus cease to grow in beef-broth after three or four days, the majority of the cocci dying a few days later; a few remain alive and capable of producing a new growth when sown on new culture-media, for ninety days, and probably longer. The cause of the cessation of growth in beef-broth is an exhaustion of the nutrient material, and not the production of a bactericidal substance. Cultures of the *Streptococcus erysipelatis* maintain their virulence when grown on solid media, but become greatly attenuated when grown in beef-broth. The virus that has become attenuated by cultivation in beef-broth may be intensified by growing in the bodies of animals. The injection of streptococci or their products into the abdominal cavity confers immunity to a second injection, in the same situation, of more virulent cultures in quantities fatal to control-animals. Cutaneous erysipelas completely protects the parts directly affected against subsequent inoculations of the virus—in other words, it confers an absolute local immunity, while on the rest of the body it confers a general immunity, which is less constant, sometimes protecting completely, at other times modifying the course of the disease, while in some instances it is entirely absent. Intra-abdominal injections of attenuated cultures of streptococci confer a somewhat more perfect immunity upon the rest of the body. Both local and general immunity are of short duration, and do not last more than a few weeks. When streptococci are introduced into the ears of rabbits protected by recent erysipelas an inflammatory reaction quickly appears, and has already subsided before inflammation has made any considerable progress in the control. The rapidity of the onset and the intensity of this inflammatory reaction are most marked in ears locally protected, less marked in those that share in the general immunity produced by erysipelas in the opposite ear; that is to say, it is proportionate to the immunity observed in these three classes of cases. A similar difference in the inflammatory reaction of immunized and normal parts is observed when filtered cultures or dead streptococci are introduced. This power of quickly reacting is an important factor of immunity, both general and local. This same power of reacting is acquired during the course of the disease and is the cause of recovery.

End-to-End Union of a Divided Vas Deferens.—W. J. Mayo and C. H. Mayo (*Annals of Surgery*, vol. xxi, No. 1, p. 35) have reported the case of a man, twenty-two years old, who for three years had suffered from a large varicocele of the left side, and who, six weeks before coming under observation, had received a severe kick, by which the tissues of the spermatic cord were badly injured. He presented a painful enlargement of considerable size, involving the whole of the structure of the cord, separated by a space of an inch from the testicle below, which was somewhat enlarged.

A free incision revealed a mass of injured veins, with an acute angle in the vas deferens, which had been lacerated and was occluded. The cord was completely resected, including an inch-and-a-half of the vas deferens. The stumps of the cord, exclusive of the vas deferens, were ligated with catgut, and the ligatures knotted together, thus raising the testicle to a higher level. A round intestine-needle, threaded with a strand of No. 4 catgut, was pushed into the lumen of the lower end of the severed vas deferens about three-quarters of an inch, and turned out through its walls laterally, drawing the catgut through. The needle was unthreaded and rethreaded upon the opposite end of the vas deferens three-quarters of an inch, and turned out through its lateral wall. The two ends of the vas deferens were now slipped together along this internal splint, like beads on a string, until they met end to end. Knots were tied on the catgut at each point of emergence from the vas deferens to form a shoulder and prevent slipping with separation. The wound was closed without drainage, and healed promptly. The patient was dismissed in eighteen days with the testicle in its normal condition. On re-examination, a month later, the result was found to be perfect.

Hemophilia at the Onset of Menstruation.—Olivier (*Journal de Médecine de Paris*, 1894, No. 31, p. 379) has reported the case of a girl, thirteen years old, who had just menstruated for the first time, the discharge at first being slight, but subsequently becoming so profuse as to threaten life. All other measures failing, the vagina was tamponed and the flow was moderated. Upon the removal of the tampon, at the end of twenty-four hours, the hemorrhage was resumed with its previous freedom. Vaginal injections of hot water were employed and followed by the introduction of a tampon, but without success.

Upon consultation, the conclusion was now reached that the girl was a hemophilic. It was learned that when a child, she had fallen, injuring the head, and a large ecchymosis had formed beneath the scalp. The removal of teeth at different times had also always been followed by free bleeding.

The following plan of treatment was outlined: 1st, vaginal injections, at a temperature of 122°, every two hours; 2d, if the hemorrhage persisted, galvano-caustic intra-uterine application of 50 milliampères, followed by a tampon; 3d, treatment directed toward the general condition, especially alcohol in some form; 4th, the hourly administration of hydrastinin. In this way it was hoped to control the immediate bleeding. The question also arose as to its repetition in the future. The removal of the ovaries in the hope of obviating such repetition was contra-indicated by the danger of fatal hemorrhage from the operation.

The Enlargement of Subcutaneous Lymphatic Glands in the Tertiary Period of Syphilis.—Montgomery (*Festschrift zur 25. Jaehrigen Jubilæum des Vereins Deutscher Aerzte zu San Francisco*, 1894) calls attention to the liability of mistaking the enlargement of the subcutaneous lymphatic glands observed in the tertiary period of syphilis for leukemia or lymphadenoma or tuberculosis. He reports several illustrative cases in which subsidence of the enlargement followed discriminating and persistent use of anti-syphilitic remedies. In some cases of secondary syphilis in scrofulous individuals the lymphatic glands become enormously enlarged and may persist after the antecedent lesions have disappeared.

Strontium Salicylate.—Wood (*University Medical Magazine*, vol. vii, No. 4, p. 219) has employed strontium salicylate in a large number of cases of various kinds, in doses of from fifteen to twenty grains a day, and has found that in doses of from five to ten grains, given after meals, the salt very commonly improves digestion, and in the dose of five grains an hour after meals, in flatulent dyspepsia and various conditions of tendency to fermentative changes in the alimentary canal, it is a useful antiseptic. It does not produce cinchonism as readily as do the other salicylates, though it is entirely capable of causing a pronounced degree of cinchonism. It was found to be valuable in the treatment of muscular or subacute rheumatism, as well as of chronic gouty conditions with a tendency to digestive disturbances, exerting the action of the salicylate upon the diathesis and improving digestion. The drug may be given in solution, but is best administered in capsules of five grains each, of which two or more may be taken at once.

THERAPEUTIC NOTES.

The Treatment of Diphtheria with the Antitoxin.—Ganghofner (*Prager medicin. Wochenschrift*, 1895, Nos. 1, 2, 3) has reported 110 cases of diphtheria treated in the Kaiser Franz Josef Children's Hospital at Prague with the antitoxin, with 14 deaths, a mortality of 12.7 per cent. Of the whole number, 44 required operative relief of laryngeal stenosis, with 6 deaths (13.6 per cent.). Among 144 cases treated in the intervals of antitoxin-treatment and immediately preceding, there occurred 62 deaths (43 per cent.); 67 required intubation, and of these 41 died (61 per cent.). The mortality in previous years with other methods of treatment had ranged from 43.6 to 63.6 per cent.

Morrill (*Boston Medical and Surgical Journal*, vol. ccxxxii, No. 4, p. 80) has reported the occurrence of three outbreaks of diphtheria in the Boston Children's Hospital and the threatened development of a fourth despite thorough cleansing and disinfection. At this stage systematic employment of the antitoxin was instituted, both in cases of diphtheria and in those of other kind, with the result that in a short time the hospital was free from diphtheria.

In the Treatment of Carbuncle Tischer (*Festschr. zur 25. Jaehr. Jubil. des Ver. Deutscher Aerzte zu San Francisco*, 1894) recommends parallel incisions about an inch apart extending to the subcutaneous connective tissue and on either side into healthy structure, and crossed by another series of parallel incisions at right angles. Subsequently the wound is irrigated several times daily with a solution of mercuric chlorid, dusted with a powder of mercuric chlorid and white sugar, 1 : 1000, and covered with gauze.

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SATURDAY, FEBRUARY 2, 1895.

SUGGESTIONS TO OUR CONTRIBUTORS.

THERE are two reasons why we wish to-day to offer our contributors a few hints in reference to the matter and manner of contributions to medical literature. The first reason is a selfish one, and relates to editorial labor. Many journals keep a standing column of "Notices to Correspondents" concerning the preparation and forwarding of articles; but, despite all reiteration of such advice, it is habitually disregarded, and the same mistakes are repeated in almost every second manuscript sent for publication.

In the hope of calling more marked attention to the matter, we therefore appeal thus directly for the not inconsiderable motive of saving future editorial labor.

But the motives are not wholly selfish, and a second one relates to other editors and to the contributors themselves. We have no doubt that many a worthy contribution to medical literature has failed to reach its proper medium of communication, or has failed to attract the attention it really merited, because of failure in the method of presentation. And very frequently such failure depends fundamentally upon something that the writer considered beneath notice. Editors are very fallible folk, as well as very busy, and the chances of the acceptance of a proffered manuscript containing, perhaps, most excellent matter, are less probable if written so illegibly as to be read only with much weariness to brain and eye; if in the very title *Iliac* is spelled *Illiac;* if the paper is rolled so that it requires four hands to hold it open for reading, etc. We well understand that one noteworthy editorial duty is to look through and past the defective presentation to the real value of the thing presented, and when editors shall have sloughed all imperfection and finiteness this will be done. In the meantime we believe that an article will run the better chance of acceptation by the best journals, it will reach the best class of physicians, and it will be read by a greater number of that class, just in proportion as the writer fastens the following suggestions well in mind, and in writing carries them out.

As in all literature, so in the medical variety, all good writing depends upon good thinking and in having something of value to set forth. Teachers of rhetoric and those untrained in literary labor are very prone to talk about style and the acquirement of style. But this is all folderol. "The style is the man." There is or there should be no such a thing as style in medical writing. The thing to do above all things is to get rid of style. The best style is no style. To think the whole matter out clearly, in advance of putting pen to paper, and then to state it in the simplest, shortest, most uncolored way, is what is most desirable. Every article written with the secret desire to advertise the writer betrays to the trained eye the unmistakable evidences of that secret desire, and by that much lessens the value of the writing. How much more evident must it be if the desire to advertise is the sole motive, when there is little or nothing of scientific value to communicate, and when general haziness of thought is manifest in every line. To have something of use to medicine and to one's fellow-workers about which to write, to think it out thoroughly in advance, and to state succinctly and clearly what this something is—these are the chief secrets of good medical writing.

Brevity is said to be the soul of wit; it is certainly the body of good judgment. There is a story of a great charity-sermon which was at once the most effective and the briefest on record. It consisted of a doubly emphatic announcement of the text: "He who giveth to the poor, lendeth to the Lord," followed only by the words, "Now, brethren, if you are satisfied with the security, down with the cash!" To say what one has to say perspicuously, without introduction or peroration, and without redundant words, is the aim of a good writer. The contributor is likely to think the editor harsh and autocratic who begs for condensation, who excises useless words, "fine sentences," exordiums, excuses, and all the other things that prevent, not aid, the author in the communication of his thought. But these things are so many obstacles hindering the many from reading. Every word that is useless or that directs the attention to the writing, or to the writer, rather than to the thought and the thing written, is just so much friction-material placed between the two minds. The more round-about the way the longer is it; the more the attention is called to the roadway the less perfect it is. The object of good scientific writing is the transference of thought; the more the reader's attention is compelled to busy itself with the medium of transfer, the less speedily and easily is the transfer itself made.

One of the first laws of the literary decalogue is that a grammatical sentence must have at least a subject and a predicate, and yet we have spent as many as several hours over a single manuscript making sentences conform to this primal commandment. One wonders whence has come the fashion in medicine of reporting case-histories in jerky, meaningless spirts and fragments of sentences, either subjectless or predicateless, usually also articleless and always ridiculous. For example, one receives something like this:

> Case I. A. B. Æt 23 Irish Seen 9th Temp 102½ Pulse 90 Resp 30 Albuminuria mind good great weakening No app Sick 10 days Tubbed Prescribed as usual. 10th, Temp. 101⅖—etc.

Now, when originally written or transcribed from the note-book, why should this not have been translated into the English language? It were quite as easy to write, and certainly more easy to read it, if written somewhat as follows:

> Case I. On January 9, 1895, I was called to see A. B., twenty-three years of age, of Irish parentage, who had been ill for ten days. His temperature was 102.5°, the pulse-rate 90, the respirations 30 to the minute. Albumin was present in the urine. The man's mental condition was good, but there were great physical weakness and loss of appetite. He was given a cold bath, and the usual medicines were ordered. On January 10th, the morning temperature was 101.4°, etc.

We could fill an entire issue of The News with suggestions as to matters grammatical, but we fear it would be useless, and it might be considered in ill-taste. The world will doubtless end before even the best writers will learn the proper and discriminating uses of *that*, *which*, and *who*, the right and sufficient use of compound words, the function of hyphens, as well as of other punctuation-marks, and a hundred like things. We wish, for instance, very much that people would not use *where* when it does not express their thought, and when *in which* or *when* does express it. There are dozens of little manuals that will give one who seeks stores of useful information in all these things, and the time spent in their study is never lost. Terseness and perspicuity of thought are largely products of the diligent study of the right use of language. If one writer more than another may be commended, we would, as a model, direct attention to one whose vigor and originality of thought were universally admired, one whose pen, alas! is now forever at rest. Few knew the scrutinizing care bestowed upon his sentences by that master of medical English, Dr. William Goodell. The limpidity and force of his words and sentences seemed so spontaneous and natural that one can hardly believe the pains he took with almost every one. He knew well enough that language is the maker as well as the servant of thought. The effort to be scholarly, to use fine language, to be "highfalutin," is the bane of many writers. To write as one would speak, simply, in short sentences, in clear, clean, old-fashioned Anglo-Saxon is the "one thing needful."

Lastly, why not be modern, scientific, crisp, American? As to chemic nomenclature and spelling we would refer our readers to the suggestions made in The News of June 17, 1893, p. 660; of December 24, 1892, p. 722; and of August 22, 1891, p. 221. Progress in philology is as inevitable as progress in therapeutics, and the fetichistic clinging to antiquated usage in one is as nonsensical as it is in the other.

Contributors sometimes feel hurt because their manuscripts are not accepted, but there are a large number of reasons besides lack of merit that often compels the rejection. If The Medical News were many times its present size it would be impossible to find space for the great mass of material offered.

Much must, therefore, necessarily be returned. But apart from this, a paper cannot, perhaps, be accepted because, for example, we have already accepted or have published as many articles on a particular subject as, for variety's sake, is advisable; because it is an article of interest to the specialist alone (and The News is a journal addressed to the general physician) or to a limited circle of readers; because while good of its kind it is too much a restatement of known or accepted truth without positive addition to medical science, etc. Then some manuscripts are at once seen to require for proper presentation such a frightful amount of "editing," so many elisons, inversions, additions, and corrections that the poor editor would evidently get no time to sleep should he do his duty to the essay and its author, with the added probability that the author would consider that his writing had been utterly spoiled, and thereafter would he be forever angry, instead of duly grateful, as he should of course be.

If every article were published simultaneously in each of the 234 American medical journals, how useless would become all of the journals except one, and how absurd would be that much manifolded article! There is hardly a week that either, through inadvertence or a most remarkable peculiarity of mind, copies of one and the same article are not received by many journals, as if for the exclusive use of each. Sometimes the titles or a few lines of introduction are changed so as to make it appear at first glance as a different article. One journal publishes it first, the others have the trouble of editing and the expense of type-setting and of proof-reading, after which it has, of course, to be "killed," because it has appeared elsewhere first. One hesitates to characterize such a proceeding in deserving and plain English; it is certainly exasperating in the extreme. It may be due to gross stupidity, or to flagrant trickiness. In the case of The Medical News, which pays for contributions, it is doubly dishonest; but in the case of every journal of character it is culpable deceit, to say the least. The editor proceeds upon the thousand-times repeated understanding that articles contributed are for the exclusive use of his journal. It is this singleness of publication that gives the article value both for the journal and, if he but knew it, for the author also. What value would an artist's pictures have if he painted a dozen exact copies of each original? What would be thought of that artist's honesty if he did so?

The Medical News gives for articles either 250 reprints or a cash credit. It does not give both, and it is necessary for contributors to choose which they prefer. When no preference is expressed, it is understood that the credit is desired instead of reprints. It is remarkable how frequently writers request or suppose that their article will appear "in the next issue," forgetting how impossible that would be, and how unjust it would be to others whose papers have been previously accepted. As a little detail of business, it is not always convenient for remittances to be made the exact instant following publication. About once in three months would seem to be reasonably frequent to make up the accounts.

There is the illegible hand-written manuscript, and there is the type-written manuscript, with the medical and orthographic ignorance of the type-writer glaring in every other word. The long-suffering editor hardly knows which is the worse. Type-writers, of course, cannot be supposed to acquire as a part of their stenographic education a knowledge of medical nomenclature and science; neither has the machine been invented that will mechanically spell our remarkable medical terms with infallible correctness. If the type-writer is used, the physician should revise her, his, or its work with his medical understanding; and if the manuscript be really manu-script, chirography and punctuation should be deemed matters worth careful consideration.

Writers should use good paper, say 8 x 10 inches in size; there should be a full inch of blank space at the left-hand side of the page, and the lines should not be too closely written. Very few writers "paragraph" correctly, and editors, therefore, much prefer that this be left as a part of the editorial work. Write "solid," putting all foot-notes immediately in the next line below that containing the asterisk, and proceeding with the text when the foot-note is completed. Draw a vertical line opposite the foot-note in the blank space at the left. If one has a drop of the milk of human kindness in his veins, he will not write on both sides of a sheet of paper, and he will not roll his manuscript. Mail if possible without folding; but if necessary to do so, fold it once, or not more than twice. Having had a single experience, both editors and publishers are thereafter afraid of a man who rewrites his article on the galley-slips.

EDITORIAL COMMENTS.

Priority Claims.—Some time ago we commented upon the mental and moral condition of the "priority-killer"—by which term we meant one that seeks to invalidate the just right of another to the honor of having discovered a new truth or of having devised a new procedure in medicine. There is, of course, a lack of dignity in asserting too often and too loudly one's own claim as a discoverer. But there is something positively disgusting in trying to rob another of his proper meed of honor in this respect, and when such covert attempts are in progress one is justified in making his own relation to a discovery clear and evident. The ignominiousness of the one who seeks to minimize, dispute, or steal the priority-rights of another consists in the method in which it is done, in the fact that the secondary claim cannot rob the discoverer of *all* his due, and in the fact that the secondary claim lacks the absolutely essential proof of the printed account preceding in time that of the primary claim. We are all wise after the event. After one has published a discovery any other who says, *I did this, or knew this years ago*, is guilty of a lack of generosity and of a culpable desire to steal another's merit. Even if discoverer No. 2 had, in truth, independently discovered or devised the thing prior to the publication of No. 1, the fitting thing for him to do would be to "keep mighty still," unless he can prove it by better means than *ipse dixit* and by "patients." Even stupid minds quickly recognize the devious ways of professional jealousy. One smiles when a writer solemnly describes "an old method" he has used in his private office "for twenty years," or "for many years," and then goes on to say, "This is essentially the same as the excellent method recently promulgated by so-and-so," etc.

We started out to describe a recent illustration of the procedure in question. As all surgeons now know and admit, to Dr. J. William White, of Philadelphia, belongs the honor of priority in devising and scientifically establishing the value of orchectomy as a radical means of cure in enlargement of the prostate gland. If the principle of eponymic nomenclature were ever justifiable, it is in this case, and we doubt not that the operation in question will be known as *White's operation* so long as personal nomenclature obtains. But an English surgeon has had the bad taste to speak of the operation as follows:

> "As frequently happens in such cases, the same idea appears to have occurred more or less definitely to many people almost at the same time. In November, 1892, I discussed the advisability of the operation with a patient, who, though he admitted the force of the arguments in favor of it, not unnaturally declined it on the ground that it must be of the nature of an experiment. In 1893, in an admirable paper read before the American Surgical Association, Professor White, of Philadelphia, summed up all that was known in favor of it, admitting that he had, as yet, formed no convictions upon the subject," etc. [Moullin, *Enlargement of the Prostate.*]

Now several things are to be noted in this excerpt: 1. There is no disputing the fact that the same idea *may* occur to several people at the same time; but the point is, did it, in this instance, occur to several? Proof is necessary. 2. Why the expression, "to *many* people?" It is only a question here of *two* people. 3. Why not produce even the *patient's* affidavit? 4. The word *admirable*, as applied to Dr. White's paper, is fine. To filch priority and detract attention by such flattering adjectives as *excellent*, *admirable*, etc., is simply detestable.

The same characteristics appear in a letter to the *British Medical Journal* of January 12, 1895, in which Mr. Moullin says:

> "Those who impute motives to others are seldom quite correct, and Professor White is no exception to the rule. It is, of course, annoying to Professor White to find that an idea which he thought peculiarly his own had occurred independently to others (who were acquainted with John Hunter's work), and had already been successfully put into practice by Ramm, but it is none the less true. As I have already answered Professor White fully elsewhere, I must decline to take any further notice of his remarks about me."

The most prominent compatriots of Dr. White's critic, such as Lister, Treves, Buckston Browne, MacMunn, and others, as well as a very large number of Dr. White's own countrymen, do not admit that Mr. Moullin has by any means either established his own claim or in the least invalidated that of Dr. White. All he has done is, disastrously for himself, to illustrate an unworthy and too common characteristic and practice. The best thing now for him to do, as he has evidently recognized, is to retire too late into the pompous dignity and reserve from which he should never have emerged.

A Climatologic Investigation by the United States Government.—The influence of climate both in the production and in the treatment of disease has long been recognized, and we are glad to learn that an earnest and systematic effort is about to be made under the auspices of the United States Government, through the Weather Bureau of the Department of Agriculture, to gather such data as must ultimately prove of the greatest value to sanitarians in the selection of places of residence with a view to the prevention and cure of disease. The work has been placed in the hands of Mr. Mark W. Harrington, the efficient Chief of the Weather Bureau, who has already in many ways manifested an active interest in the subject of sanitary climatology.

In the official announcement it is pointed out that the study of the climates of the country in connection with the indigenous diseases should be of material service to every community, in showing to what degree local climatic peculiarities may favor or combat the development of different diseases, and by suggesting, in many instances, supplementary sanitary precautions; also by indicating to what parts of the country invalids and health-seekers may be sent to find climatic surroundings best adapted to the alleviation or cure of their particular cases.

The hearty coöperation of the various boards of health, public sanitary authorities, sanitary associations and societies, and of physicians who may feel an interest in the work, is asked, to the end of achieving and perfecting the aims of this investigation.

It is proposed to send, free of cost, the publications of the Bureau bearing upon climatology and its relation to health and disease to all those who assist in the work.

Coöperation will consist in sending to the office of the Chief of the Weather Bureau of the United States Department of Agriculture, at Washington, D. C., reports of vital statistics from the various localities. That these reports may be of value, they should be accurate and complete, and be rendered promptly and regularly. Accordingly, blank forms of reports have been prepared so as to occasion as little trouble and labor as possible on the part of the reporter, and will be furnished by the Bureau on application. It is pointed out that at the very beginning of the investigation it is not possible to outline precisely the channels through which the results obtained will be made public, but it is hoped to publish soon a periodical devoted to climatology and its relations to health and disease. The publication will probably resemble in size and general appearance the present *Monthly Weather Review*, the subject-matter being, of course, different.

English at the United States Military Academy.—From the interesting Report of the Board of Visitors of the United States Military Academy we learn that out of 1375 hours of study in three years, devoted to modern languages, 294 are given to English, and the entire remainder to Spanish and French. German is entirely omitted. The committee was "rather painfully impressed in the examinations with the halting English of a number of the cadets." The recommendation of the committee is that some of the time given to other studies be given to English—a plan that would seem most desirable. But better yet is their suggestion that the standard of entrance-requirements be elevated. We surmise that the difficulty lies in the use of the Academy by Congressmen to get schooling for the boys of their friends at home. Concerning faulty education in the mother-tongue, this grave fault lies at the door of very much of our so-called education. There is a sad straining after the showy and the *omne ignotum* rather than an attempt to render effective the use of our own language. We have known pupils to study rhetoric, trigonometry, French, Latin, etc. etc., when they could not spell ten common English words correctly. Concerning the elevation of the entrance-standards the committee says:

> "This would only require probably six months more of study before entering the Academy, and would provide very much needed time for English, history, ethics, hygiene, and possibly for German.
>
> "It is urged that this will cut off some poor boys who otherwise might enter, and even graduate. Even were this true, it would be better to cut off a few ill-trained poor boys entering as officers than by a less thorough training of the whole corps of cadets to expose the thousands of poor men in the ranks to the evils of poorly equipped officers. But West Point exists neither for the poor boy nor the rich boy, but to give the country the very best and most efficient officers to command its Army, upon which often depends security of life and property, public and private, in cases of domestic disturbances, and upon which must always absolutely depend victory in time of foreign war. No officer can be too well trained for such a command. It is very easy to provide officers too poorly equipped, and so invite defeat.
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> "The increase suggested in the conditions for admission is very moderate. The present requirements were formulated nearly forty years ago, when our public schools were poor and scattered, and the instruction given in them was very limited. This is not true now. The enormous strides in general preliminary education should cause our war college also to make equal advances. The public schools are ready to furnish better students just so soon as West Point will take them."

The Transmission of Typhoid Fever through the Intermediation of Oysters.—The conclusion recently suggested (see THE NEWS, December 8, 1894, p. 641) that typhoid fever may be transmitted through oysters, as based upon the occurrence of an epidemic among the students in a New England University, receives confirmation from the report of analogous occurrence in England. SIR WILLIAM BROADBENT (*British Medical Journal*, January 12, 1895, p. 61) reports quite a collection of cases in which typhoid fever developed in individuals under circumstances in which the infection had to be ascribed to the ingestion of raw oysters. This relation has been suspected in the past, but the evidence was never as conclusive as that furnished by the more recent experiences. The simplest means of prophylaxis, other than abstaining absolutely from the use of oysters, is to have them cooked; but it seems that steps should be taken to prevent contamination of the waters in which oysters are either grown or placed temporarily for their improvement.

EADE (*British Medical Journal*, No. 1777, p. 121) has further pointed out that not alone oysters, but also other forms of shell-fish, as, for instance, mussels, are capable of transmitting typhoid fever. He cites an epidemic of typhoid fever in a community of which the poorer classes were especially affected, and among whom mussels were largely used as an article of food. These fish, being stored in the beds of streams until disposed of by sale, are peculiarly liable to be contaminated and to constitute the means of transmitting the infection.

"*The Missing Link*" has been discovered, and all Darwinians may now in concert exclaim, *We told you so!* DR. EUGENE DUBOIS, of the Dutch East India Army, has found our common revered progenitor in the late Pliocene or post-Pliocene deposits of the island of Java, and he gives this long-sought-for ape-form the fitting name of *Pithecanthropus erectus*, pronouncing it to be the intermediate form between man and the true anthropoid apes. The cranial arch is said to be surprisingly pronounced, falling almost half-way between that of the chimpanzee and that of man, while the cranial capacity approaches to the physiologic minimum of man, and is double that of the gorilla. The femur is the analogue in form and dimensions of that of man, and must have supported an erect body. We are delighted that the matter is settled, so that we may go on with the work of human perfection, knowing at last exactly where our family-tree begins and where we now stand.

Mr. Ernest Hart in India.—That indefatigable traveller and preacher of hygienic morality, Mr. Ernest Hart, has carried the war into India, and has been seeking to hammer into Mahomedan ears and understandings the great lessons of sanitation and preventive medicine upon which not only the health of the Orient but that of the Occident depends. Under the auspices of the Mahomedan Literary Society of Calcutta, and before a large gathering of European and Mahomedan gentlemen, Mr. Hart ingeniously and powerfully pleaded for the extinction of Meccan cholera by the means well known to all civilization but which are so profoundly needed in the East. For this tirelessness in a noble work the whole world is deeply indebted to Mr. Hart, and we hope his eloquence may not be wasted upon our Mahomedan brethren.

SELECTION.

MEDICAL PROGRESS IN INDIA.

My period of service, now close on thirty years, has been marked by enormous progress in all directions. Medical colleges, in which a complete education is given in English, have been opened at Lahore, Allahabad, Tanjot, Nellor, and affiliated to the universities. At Haidarabad the classes have been taught in English since 1882. Additional vernacular medical schools for the education of civil hospital assistants and civil medical practitioners are now working at Sealdah, Patna, Dacca, and Katak.

The medical education of women has also been recently introduced, and girls are now trained for the purposes of the Dufferin Fund at most of the medical schools. The number of hospitals and dispensaries open last year was 2025, in which were treated 16,973,468 patients, increases of 76 and 176 per cent. over 1877. There were 4476 operations for stone, 20,279 for cataract. Vaccination has been enormously extended and put on a much more systematic footing; 7,502,024 operations were done, an increase of 62 per cent. These figures indicate great activity and afford ground for congratulation, yet, compared with the wants of the country, indicate that they still touch but the fringe of the population. In Bengal, for instance, only one-fifteenth of the people are within five miles of a dispensary, and a considerable percentage of the children born escape vaccination, so that bad epidemics of smallpox are still possible. Of recent years an entirely new development has taken place in the organization of special hospitals for women officered by medical women, under the fostering care of the noble Lady Dufferin, whose name, like Milton's, should resound for ages among the zenanas of India. Still in its infancy, it is doing enormous good to a class whose needs are of the sorest, and it is, I believe, destined to flourish and increase until every important town in India has its Dufferin Hospital side by side with its hospital for males.

Sanitary progress, however, is the chief feature of the last thirty years, and more especially of the last decade. I have told you how the death-rate of British soldiers up to 1857 averaged 69 per mille, and that the Sanitary Commission ventured to hope it might be reduced to 20. This estimate was too modest, for since 1882 it has never exceeded 15, except in 1889, when it was 16.6, less than a quarter of the previous rate. The reduction has been effected by hygienic reforms of all kinds, but especially by the gradual improvement of the water-supply in cantonments, first by cleaning and protecting wells and tanks and setting them aside for drinking purposes only, a plan which has been followed for many years; and of recent years by scientifically devised water-works provided with all the latest improvements. —*From the address of the President, Surgeon-Colonel Harvey, at the opening of the Indian Medical Congress, December, 1894.*

SPECIAL ARTICLE.

MILK-INSPECTION AND MILK-STANDARDS.[1]

By HENRY LEFFMANN, M.D.,
OF PHILADELPHIA;
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[Reprinted from advance sheets of the forthcoming annual report of the Board.]

No topic in sanitary science has received greater and more careful attention in the past twenty years than the analysis of water and milk, and few topics have exhibited greater transformations as to the principles on which judgments as to sanitary value may be based. The extension of bacteriology has enabled us to identify the causes of disease and to demonstrate in many cases the methods of propagation.

In water-analysis we can still rely with much confidence on the merely analytic results, though we recognize that the figures for chlorin, ammonia, and so on, are merely indexes of pollution and not injurious in themselves. In milk-analysis, we have first been obliged to correct our analytic methods, and, lately, to revise materially our views as to the manner in which milk affects the public health.

In the judgment of the results of a water-analysis, chemists have never been misled into attaching undue importance to the proportion of dissolved matters; but in judging of the results of milk-analysis this error has long been made, and is still being made by sanitary officers. Thus, in the early days of the agitation of the question of milk-inspection in Pennsylvania, reference was not infrequently made to the high rate of infant-mortality, and this was ascribed to the reduction of the strength of the milk-food by dilution and skimming.

At the present day we are in possession of a much wider and more exact knowledge as to the manner of the distribution of disease by milk. We now know that serious dangers arise from the contamination of the milk by microbes, and that such dangers fall practically into two classes.

The first class is that due to contamination of milk by specific micro-organisms from disease, either among the milk-yielding animals or among the persons about the farm. I do not think that it will be necessary to discuss these questions in much detail, for all are pretty familiar with the subject. Possibly, some may not fully appreciate the extent to which specific disease in dairy cows exists, and to which it infects human beings; but I frankly say that I am a convert to the view that the production of cows' milk for human food, under the present methods of collection and use, is one of the most dangerous of human industries. As an illustration of the extent to which tuberculosis may exist in herds, I take the following articles from the *Medical Record* of January 6, 1894.

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[1] At the annual (1894) meeting of the Board one session was devoted to the discussion of questions relating to "Milk-Standards and Milk-Inspection." These subjects were selected because at the preceding session of the Legislature the Senate Committee on Agriculture had requested the Secretary of the Board thus to introduce the question at one of the meetings of the Board, and obtain the opinions, *pro* and *con*, of those interested.

All parties interested were invited by advertisement and programs, and a number of persons known to hold diverse views were invited, to be present and explain their positions.

"Probably few physicians are aware of the enormous practical value in the animal industry of tuberculin, that is to say, if the position taken by the New York and other State Boards of Health regarding it is correct. A gentleman who has a valuable herd of thoroughbred cows writes us that twice within the last six months his herd has been examined by competent veterinarians and pronounced healthy. A third examination, however, with the aid of tuberculin, caused a condemnation of over one-half of the herd. He adds:

"'The New York State Board of Health is killing by the hundreds animals condemned by diagnosis with tuberculin, and the State is paying full value for them. The veterinarian says that the autopsy shows the diagnosis to be correct in every case.' He says, also, that it is impossible for the best veterinarian to discover tuberculosis by physical examination except in extreme cases. 'My herd is apparently in splendid condition. Breeders do not know of its existence in their herds. They let a cow remain in the herd until she is unquestionably tuberculous, and then remove her, but she has then already infected the herd. A temperature of 103° F. condemns the cow.' In a herd of Jerseys, at Troy, of 80 head, he has killed 33, and will kill 20 more of them this week. Autopsies are held in the presence of physicians and veterinarians. There have been 15,000 tests with tuberculin in England. New York evidently believes in this kind of diagnosis, and will probably have to pay $500,000 to eradicate tuberculosis. The veterinarian says the State is full of it, in herds of thoroughbreds and common cows.

"We understand from other sources that the State Board of Health fully believes in the certainty of the tuberculin diagnosis. Through its means it has been discovered that some of the best-bred herds, supplying high-priced milk, cream, and butter are infected."

It is apparent from this article, which is merely one of many similar statements, that we have not fully realized the relations of milk to the prevalence of the disease which is known to be the cause of one-seventh of the total deaths in civilized countries, and is the unsuspected cause of many more.

It is, however, not only disease in the cow which may be conveyed. The conditions of farm-life are such that milk often conveys virulent, infectious diseases from the dairyman's family to his customers. Here, again, the literature is so abundant, and the facts are so generally known, that I need not stop to detail them. Those who are interested in this phase of the question will find some valuable and recent data in the report of the State Board of Health of Massachusetts. Several epidemics of typhoid fever were traced to milk supplied from a farm on which a case of this disease existed.

We find, however, that even when milk is taken from cattle entirely healthy, and on farms in which no specific disease exists, it may become a most dangerous article of food. This is due to the decompositions which are induced in it by bacteria. Milk is a close approach to a perfect food. It is not an absolutely perfect food for human beings, because it is deficient in iron; but it serves admirably as a medium for the growth of bacteria, many species of which produce remarkable changes in the casein, by which highly poisonous compounds are set free. Now, under the ordinary methods of milking, infection with multitudes of the common bacteria of the air, water, and even soil is certain to occur. That milk usually contains these is proved by the deposits obtained in centrifugal swimming, which show, under microscopic examination, many repulsive materials. When milk as ordinarily furnished is kept at summer temperature, the bacteria increase with great rapidity, and it is now recognized that a proportion of the infant-mortality in the warmer season is caused by this condition. In fact, the information at present in our possession shows that, unless collected under extreme precaution, raw milk, at least cow's milk, is not a suitable food for human beings. Hence the general practice of sterilization, which has resulted so favorably in the feeding of infants. Statistics have been recently published which show that death from tuberculosis occurs in large proportion in infants, the action being due to the entrance of the tubercle-bacillus into the lacteals, thus preventing the absorption of the food and causing death by starvation.

I have endeavored so far to indicate briefly, but I hope distinctly, the idea that sanitary control of milk-supply may have little to do with the mere question of the chemic composition of milk. It is of very little moment to the consumer, except on a question of cost, whether milk contains 12, 13, or 14 per cent. of solids. The claim that milk watered or skimmed is unwholesome rests on no positive information, and within certain limits of variation, the regulation of the composition of milk is no more a matter of sanitary duty than the regulation of the proportion of fat and lean in the meat sold in our markets, or the proportion of alcohol and extract in beer and ale. Nevertheless, economic considerations will doubtless lead to the establishment of some standard for milk, and it will be sufficient to fix the minimum, not the average. The time is passed when we can claim 9.50 solids not fat for a standard, and even 9.00 per cent. is unjust. In my opinion, there should not be fixed in any legal enactment a higher figure than 8.50 per cent. of solids not fat, and 3.00 per cent. fat for whole milk. Skimmed milk should be permitted to be sold as such, and should not be required to contain any fat; that is, any one purchasing skimmed milk should assume that all the fat may have been removed. I have never been able to understand the logical process in the minds of those who desired to prohibit the sale of skimmed milk. However, when we remember that the same parties who last winter were trying to prevent the sale of skimmed milk proposed also to prohibit the sale of condensed milk containing less than twenty-five per cent. of fat, which would exclude all the standard brands in the market, we can appreciate the impracticable views that may be advanced.

It has been the custom of some persons to designate the skimmed milk from centrifugals as "separator slop," but I am unable to see that such an article is any more of the nature of a refuse than buttermilk, whey, or cheese.

The standard of the Society of Public Analysts of England, an organization which represents, I think, the highest judgment and experience on the question, is 8.50 solids not fat and 3.00 of fat. Concerning this standard, Dr. Vieth, a dairy-chemist of large experience, recently expressed himself as follows:

"My object is by no means to raise the cry that the standard adopted by the society is too high; on the contrary, I think it is very judiciously fixed, but in upholding the standard of purity it should not be forgotten that the cows have never been asked for, nor given their assent to it, and that they will at times produce milk below standard. A bad season for hay-making is, in my experience, almost invariably followed by a particularly low depression in the quality of milk, toward the end of winter. Should the winter be of unusual severity and length, the depression will be still more marked. Long spells of cold and wet, as well as of heat and drought, during the time when cows are kept on pasture, also unfavorably influence the quality, and, I may add, quantity of milk."

Much discussion has been given to the effects of special forms of food and their relation to the wholesomeness of milk. Legislation promoted by health-boards often involves prohibition of the use of brewers' grains or distilling refuse. In regard to these matters I desire to transcribe two personal letters received from Dr. Vieth, whom I have just quoted:

"The reason that I have not acknowledged and answered your favor of August 21st ere this, is, that I desired to give you as much information as possible on the subject of the effect of brewers' grains and similar refuse on the wholesomeness of milk.

"I suppose it is about the same in your country as it is in ours, viz.: that people are not slow in passing an opinion on the matter in question either one way or the other; but when one sets to work to follow the matter up, one finds these opinions not substantiated by facts. I was, when I received your letter, not aware of any publication on the matter in question, and have since taken much trouble to find one or collect information worthy to be transmitted to you. I am sorry to say that I have failed in my endeavors almost entirely. Hunting through the literature, I have found brewers' grains barely mentioned in connection with the question of the wholesomeness of milk—and have got the impression that no one thinks of expecting any bad effect from the use of that food. Here the question turns almost entirely about the admissibility of distillery-wash as food for milk cows. This food has a good many adversaries, but, it seems, even more defenders. It is generally admitted that, when fed in moderate quantities and in a fresh state, and other food given besides, it will do no harm. When given in large quantities—say from fifteen to twenty gallons per day—it certainly produces a very poor milk, which is said to have a bad effect on infants. This is most likely true, but I have failed to find it proved by experiments or exact observations. The best observations on the subject I have come across are made by Prof. König, and are contained in a paper which has been published in *Repertorium für Analytische Chemie*, 1881. They are also based on theoretic speculation, and not on actual experiments. Before leaving the subject I should like to mention that there is most likely a considerable difference between brewers' grains from ale and from lager beer breweries.

"When your card of the 21st ult. arrived I had just come into possession of some more evidence with regard to feeding milch-cows with distillery-wash; that is, the refuse from the manufacture of potato-spirit. Professors König, of Munster, and Maercker, of Halle, are two eminent authorities on the subject of cattle-feeding. The former is of opinion that there is no objection to giving to cows from forty to fifty liters of fresh distillery-wash per diem, provided other suitable food is given in addition. He would rather not have the distillery-wash used in a sour condition, and objects to feeding children with milk from cows which have received it. (In the prohibition of the use of distillery-wash he would see a serious injury; but it should be demanded by law that milk thus produced should all be sold in the sterilized condition.) All the objections would be overcome by the use of distillery-wash in the dried state.

"Prof. Maercker writes that the supposition that the milk from distillery-wash fed cows is injurious to health is in no way supported. The distillery-wash is completely sterilized in its manufacture, which is not the case with any other food. If milk from distillery-wash fed cows has caused illness, the fault is that proper care had not been taken to keep the cowsheds, and more particularly the mangers, clean. Under such conditions, any food might produce similar ill-effects.

"Ohlsen and Uffelmann, of Rostock, have made an investigation into the matter and published the results in the *Jahrbuch für Kinderheilkunde*, 34, vol. 1. The results are, in short, as follows:

"The milk from cows fed with distillery-wash is of neutral, sometimes alkaline reaction. Acidity did not set in before the lapse of forty-eight hours. Provided suitable food be given in addition, the milk does not appear unsuitable for feeding infants. There is no proof that the milk produces indigestion or rachitis with infants. Microscopic and bacteriologic examination did not prove any difference from other milk.

"The work of Ohlsen and Uffelmann is the first evidence on the subject, founded on exact observation, which has come to my knowledge, and as I thought it might be useful to you I wish to draw your attention to it without delay."

It appears, then, that the danger from milk, as far as the dairyman is concerned, is the introduction of specific germs through diseased cattle; and it is worthy of note that the liability to such disease is as great, if not greater, in cattle yielding rich milk than in those yielding poor milk. One of the reasons that sanitary officers have sometimes given for asking that the legal limits of milk shall be fixed above the average is that it will tend to "improve the quality of the dairy-cattle" supplying the city. Independently of the fact that it is no part of the sanitary method to develop superior types, it seems that such stimulation will lead to the worst conditions. Questions of chemic composition are trifling in proportion to the matter of the prevention of the spread of specific disease.

CORRESPONDENCE.

SCARLATINA AND MEASLES AT THE SAME TIME.

To the Editor of THE MEDICAL NEWS,

SIR: In THE MEDICAL NEWS of January 19th there is reported a case of scarlatina and measles in the same patient.

The following case came under my observation December 16, 1894: The patient was a little girl, five years old. She sickened two days prior to my visit, with scarlet fever of moderate severity. The exposure was some twelve days before. When the child was first seen the rash was well distributed over the entire body below the clavicles, and she presented a severe scarlatinal throat, with characteristic tongue; the papillæ being well elevated and the organ very red. The case advanced without any unusual occurrence, and desquamation began about the fingers and toes on the seventh day. My attention was then attracted by a cough which was due to a general bronchitis; the eyes were suffused, but I thought nothing of it until three days after the cough began, when a rash was then making its appearance on the forehead, the neck, and the face, having all the characteristics of that belonging to measles. On the following morning it covered the remaining part of the body, and was accompanied by lachrymation and coryza. No source of infection could be discovered and no case of measles existed in the neighborhood.

Very respectfully yours,

Herman C. Gordinier.

Troy, N. Y.

NEWS ITEMS.

Obituary.—Dr. Alfred L. Loomis, the distinguished physician of New York, died on January 24th, of heart-failure from pneumonia, after a brief illness. He was born in Bennington, Vt., in 1831, and was graduated from Union College in 1851, receiving his medical degree in 1853 from the College of Physicians and Surgeons of New York. Soon afterward he was appointed assistant physician to the charity hospitals on Ward's and Blackwell's Islands, and continued in this position for two years, when he took up private practice. In 1860 he became visiting physician to Bellevue Hospital, and later to Mt. Sinai Hospital, both of which positions he still held at the time of his death. From 1860 to 1875 he was consulting physician to the charity hospitals. In 1862 Dr. Loomis was made lecturer on physical diagnosis in the College of Physicians and Surgeons; in 1865, adjunct professor of the theory and practice of medicine in the University of the City of New York; and in 1867, professor of pathology. Dr. Loomis was a member of many medical societies, and was a generous contributor to medical literature. Among his more important works are *Lessons in Physical Diagnosis; Diseases of the Respiratory Organs, Heart, and Kidneys; Lectures on Fevers; Diseases of Old Age; A Text-book of Practical Medicine.* At his solicitation an anonymous benefactor in 1886 donated $100,000 to the University of the City of New York for the establishment and equipment of the Loomis Laboratory.

Dr. Loomis has bequeathed the income of $25,000 to the Loomis Laboratory; $10,000 to the Academy of Medicine for a Loomis entertainment fund, the income of which is to be devoted to the entertainment of Fellows of the Academy.

Meetings of State and National Medical Societies:

	Meets.	Next meeting.
American Academy of Medicine.	May 8, 1895	Baltimore.
American Association of Genito-urinary Surgeons.	May 28-31, 1895	Washington, D. C.
American Medical Association	May 7, 1895	Baltimore.
Association of Military Surgeons of the United States.	May, 1895	Buffalo, N. Y.
British Medical Association	July 30-Aug. 2,	London, England.
Idaho State Medical Society.	Sept. 9-11, 1895	Boise City, Id.
Illinois State Medical Society	May 21, 1895	Springfield, Ill.
International Congress of Hydrobalneotherapy.	1895	Ostend.
International Medical Congress.	August, 1896	Moscow, Russia.
Iowa State Medical Society.	April 17, 1895	Creston, Ia.
Kansas State Medical Society.	May, 1895	Topeka, Kans.
Kentucky State Medical Society.	June 5, 1895	Harrodsburg, Ky
Louisiana State Medical Society.	May 7, 1895	New Orleans, La.
Maine Medical Association.	June 5, 1895	Portland, Me.
Massachusetts Medical Society.	June 11, 12, 1895	Boston, Mass.
Medical and Chirurgical Faculty of Maryland.	April 23, 1895	Baltimore, Md.
Medical Association of the State of Alabama.	April 16-19, 1895	Mobile, Ala.
Medical Association of Georgia.	April 17, 1895	Savannah, Ga.
Medical Association of Montana.	April, 1895	Anaconda, Mont.
Medical Society of the State of California.	April 16, 1895	San Francisco, Cal.
Medical Society of the State of New Jersey.	June 25, 26, 1895	Cape May, N. J.
Medical Society of the State of New York.	Feb. 5, 1895	Albany, N. Y.
Medical Society of the State of North Carolina.	May 14-16, 1895	Goldsboro', N. C.
Medical Society of the State of Pennsylvania.	May 21, 1895	Chambersburg, Pa.
Medical Society of the State of Tennessee.	April 9, 1895	Nashville, Tenn.
Medical Society of Virginia.	October	Wytheville, Va.
Medical Society of West Virginia.	July, 1895	Elkins, W. Va.
Michigan State Medical Society.	June 4, 1895	Bay City, Mich.
Mississippi State Medical Association.	April 10, 1895	Jackson, Miss.
Missouri State Medical Association.	May 21, 1895	Hannibal, Mo.
Nebraska State Medical Society.	May, 1895	Grand Island, Neb.
New Hampshire Medical Society.	May 30, 31, 1895	Concord, N.H.
New Mexico Medical Society	July 10, 1895	Las Vegas, N. M.
New York State Medical Association.	October 15-17	New York City
Ohio State Medical Society.	May 15-17, 1895	Columbus, O.
Ontario Medical Association.	June 5-6, 1895	Toronto, Ont.
Oregon State Medical Society	June, 1895	Portand, Ore.
Rhode Island Medical Society.	June 6, 1895	Providence, R. I.
South Carolina Medical Association.	April 24, 1895	Columbia, S.C.
Texas State Medical Society.	April 23, 1895	Dallas, Tex.
Tri-State Medical Society.	April 2-4, 1895	St. Louis, Mo.
Vermont State Medical Society.	October 10, 11	Burlington, Vt.
Washington State Medical Society.	May, 1895	Seatle, Wash.
Wisconsin State Medical Society.	June 5-7, 1895	West Superior, Wis.

Meetings of Philadelphia Medical Societies:

	Meets.	Next meeting.
Academy of Surgery,	1st Monday of month, Oct.—June.	Feb. 4
College of Physicians,	1st Wednesday of month, Sept.—June.	Feb. 6
Section of Gynecology,	2d Monday of month, Oct.—June	Feb. 11
Section of Ophthalmology,	3d Tuesday of month, Sept.—May.	Feb. 19
Section of Orthopedic Surgery,	3d Friday of month, Oct.—April.	Feb. 15
Section of Otology,	1st Tuesday of month, Oct.—May.	Feb. 5
Section of Surgery,	2d Friday of month, Oct.—May.	Feb. 8
County Medical Society,	2d and 4th Wednesdays of month, Sept —June.	Feb. 3
Neurological Society,	4th Monday of month, Oct.—April.	Feb. 25
Obstetrical Society,	1st Thursday of month, Sept.—June.	Feb. 7
Pathological Society,	2d and 4th Thursdays of month, Sept.—June.	Feb. 14

The Treatment of Variola with its Antitoxin.—Passed Assistant-Surgeon Kinyoun has reported to the Supervising Surgeon-General of the Marine-Hospital Service the employment of the blood-serum of a heifer calf, vaccinated four weeks previously, in the treatment of two cases of variola. Fifteen cubic centimeters of the serum were injected subcutaneously when the cases came under observation, and again after the lapse of eight or ten hours. In one case four injections were made, in the other seven. A careful study of the cases, individually and comparatively, led to the conclusion that the treatment exercised a modifying influence upon the disease, especially upon the eruption. One of the cases died, but it is believed that life was prolonged at least seventy-two hours by the treatment. It is suggested that as the serum appears capable of mitigating the attack of variola it ought to have the power of rendering susceptible individuals refractory to the disease.

BOOKS AND PAMPHLETS RECEIVED.

When All the Woods are Green. A Novel. By S. Weir Mitchell, M.D., LL.D. New York: The Century Co., 1894.

Kaposi's Clinic. Interesting Dermatological Cases. By Frank J. Thornbury, M.D. Reprinted from the Buffalo Medical and Surgical Journal, 1894.

Bloodless Vaginal Myomectomy. By Oscar J. Mayer, M.D. Reprinted from the Journal of the American Medical Association, 1894.

Uterine Fibroids. By Charles P. Noble, M.D. Reprinted from the Medical and Surgical Reporter, 1894.

Tricuspid Insufficiency. By Frank J. Thornbury, M.D. Reprinted from the Buffalo Medical and Surgical Journal, 1894.

Air and Contact Infection. By Frank J. Thornbury, M.D. Reprinted from the St. Louis Clinique, 1893.

Arsenite of Copper as an Antispasmodic. By W. Blair Stewart, A.M., M.D. Reprinted from the American Therapist, 1894.

Spindle-Cell Sarcoma and Epithelioma: A Report of Cases. By W. Blair Stewart, A.M., M.D. Reprinted from the American Medico-Surgical Bulletin, 1894.

Massage in Gynecology. By Oscar J. Mayer, M.D. Reprinted from the Journal of the American Medical Association, 1894.

The Special Training of the Medical Officer, with Brief Notes on Army Medical Schools Abroad and at Home. By Charles H. Alden, M.D. An Address Delivered before the Association of Military Surgeons of the United States, at Washington, D. C., May 3, 1894.

Morphinism in Medical Men. By J. B. Mattison, M.D. Reprinted from the Journal of the American Medical Association, 1894.

The Modern and Humane Treatment of the Morphin-Disease. By J. B. Mattison, M.D. Reprinted from the Medical Record, 1893.

Address before the American Medico-Psychological Association. By S. Weir Mitchell, M.D., LL.D. Reprinted from the Journal of Nervous and Mental Diseases, 1894.

Twelfth Annual Report of the Provincial Board of Health of Ontario, being for the year 1893. Printed by order of the Legislative Assembly. Toronto: Warwick Bros. & Rutter, 1894.

Rational Medicine and Charlatanry. By Burnside Foster, M.D. Reprinted from the Northwestern Lancet, 1894.

The Bubo Plague in China, with a Brief Account of the Great Plague of London. By Burnside Foster, M.D. Reprinted from the Journal of the American Medical Association, 1894.

Home Treatment for Catarrhs and Colds. A Handy Guide for the Prevention, Care, and Treatment of Catarrhal Troubles, Cold in the Head, Sore Throat, Hay Fever, Hoarseness, Ear Affections, etc. By Leonard A. Dessar, M.D. New York: Home Series Publishing Co.; and London: Ballière, Tindall & Cox, 1894.

Nature, Diagnosis, and Treatment of Pernicious Anemia. By Alfred Stengel, M.D. Reprinted from the Therapeutic Gazette, 1894.

Appendicitis: A Timely Operation. By Howard Crutcher, M.D. Reprinted from the Medical Current, 1894.

The Influence of Diseases of the Nose and Naso-Pharynx on Other Parts of the Body. By W. Scheppegrell, A.M., M.D. Reprinted from the New Orleans Medical and Surgical Journal, 1894.

The Sources of the Defective, Dependent, and Delinquent Classes. By Bayard Holmes, M.D. Reprinted from the Bulletin of the American Academy of, Medicine, 1894.

Incipient Inflammations of the Ear in Early Life, and Their Sequelæ. By S. MacCuen Smith, M.D. Reprinted from the New York Medical Journal, 1894.

One Year in a Southern Skin-Clinic. By Isadore Dyer, Ph.B., M.D. Reprinted from the New Orleans Medical and Surgical Journal, 1894.

On the Relations of Some Occupations to Eyesight. By Simeon Snell, F.R.C.S. Ed. Reprinted from the Quarterly Medical Journal, Vol. III, Part I.

Some Meteorological Data. By Samuel A. Fisk, A.M., M.D. Reprinted from the Boston Medical and Surgical Journal, 1894.

Transactions of the Medical Society of the State of Pennsylvania, at its Forty-fourth Annual Session, held at Philadelphia, 1894. Vol. XXV. Published by the Society. Philadelphia: The Edwards and Docker Co., 1894.

Medical Jurisprudence, Forensic Medicine, and Toxicology. By R. A. Witthaus, A.M., M.D., and Tracy C. Becker, A.B., LL.B. Vol. II. New York: William Wood & Co., 1894.

The Bristol Meeting of the British Medical Association, 1894. Reprinted from the Bristol Medico-Chirurgical Journal, 1894.

Diet for Health. By John Aulde, M.D. Reprinted from the American Therapist, 1894.

The Physiological Rôle of Antitoxin Inoculations. By John Aulde, M.D. Reprinted from the American Therapist, 1894.

Nucleins: A Clinical Study. By John Aulde, M.D. Reprinted from the New York Medical Journal, 1894.

The Physiological Actions of Alcohol. By David Cerna, M.D., Ph.D. Reprinted from the Therapeutic Gazette, 1894.

The Therapeutic Uses of Spartein. By David Cerna, M.D., Ph.D. Reprinted from the New York Medical Journal, 1894.

The Modern Treatment of Fractures of the Patella, with Illustrations. By J. W. Felty. Reprinted from the International Journal of Surgery, 1894.

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ORIGINAL ARTICLES.

ANALYSIS OF CASES OPERATED ON WITH THE AID OF THE MURPHY BUTTON UP TO THE PRESENT TIME.

BY JOHN B. MURPHY, A.M., M.D.,
OF CHICAGO;
PROFESSOR OF SURGERY AND CLINICAL SURGERY, COLLEGE OF PHYSICIANS AND SURGEONS; PROFESSOR OF SURGERY, POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL; ATTENDING SURGEON COOK COUNTY HOSPITAL; ATTENDING SURGEON ALEXIAN BROTHERS' HOSPITAL; CONSULTING SURGEON HOSPITAL FOR CRIPPLED CHILDREN, ETC.

A SUFFICIENT time has now elapsed to warrant a complete report of the cases operated on by means of the Murphy anastomosis-button and to justify us in drawing conclusions as to the field of its usefulness. The advantages and disadvantages of the device were at first theoretic; they were later sustained or controverted by the results of experiments and in a small number of cases; finally we have now a very large number of cases from which to draw conclusions, and a sufficient number, I believe, to enable us to make valuable deductions for our guidance in the future. We shall consider the cases in groups and endeavor so to arrange them that the danger of the disease for which the operation was performed will be about equal in individual cases of the same group. We shall pay particular attention to the fatal cases and endeavor to determine the cause of the fatality: whether it was a result (*a*) of the disease itself; (*b*) of the general condition produced by the disease; (*c*) of the operation; (*d*) of failure to obtain a perfect result at the seat of approximation; (*e*) of the sequel of the operation; or (*f*) of intercurrent causes. With this general plan as a guide we take up the subject as follows:

GASTRO-ENTEROSTOMY FOR MALIGNANT DISEASE.—By lateral approximation. Of this variety we have had twenty-seven cases with nine deaths. The first death was case No. 2. The patient had suffered from severe hemorrhage for four weeks preceding the operation, and it was hoped that by establishing a gastro-enterostomy a contraction of the stomach would take place, and possibly hemostasis. The operation was performed in seven minutes. The patient suffered little from shock, but the bleeding continued as before, and ended fatally four days later. The autopsy showed a perfect approximation. The second death was case No. 7. The patient died of exhaustion forty-eight hours after the operation. A perfect approximation was found on autopsy. The third death was case No. 9. The patient was very much emaciated and depressed before operation, and died twelve hours afterward. The autopsy showed a perfect approximation. The fourth death was case No. 15. The patient died of exhaustion in twelve hours. The fifth death was case No. 16. The smallest-sized button was used, as the operator had no other at the time. The button was so small that it was impossible for it to hold a sufficient amount of the tissue to retain the margin of a thick wall, as of the stomach, within its grasp. The wall slipped away from the clasp of the button, the gastric contents escaped into the peritoneal cavity and caused death. The smallest-sized button should never be used in any operation on the stomach. I do not consider it necessary to resort to the means suggested by Dr. Mynter and others, of placing a row of sutures outside of the button. If the proper-sized button be used and the running thread be properly inserted and tied, I consider the suturing unnecessary. The sixth death was case No. 17. The patient died of circumscribed peritonitis on the third day. On post-mortem examination the approximation was found to be perfect, and in the stomach was found a large ulcer three inches in diameter, which was probably the source of the infection. There was also carcinoma of the pancreas, the liver, and other organs, all of which contributed to lessen the resistance of the tissues against infection. The seventh death was case No. 21. The patient died of exhaustion four days after the operation. Perfect approximation was found, but no infection, and the button still in position. The eighth death was case No. 24. The patient died on the seventh day from a general suppurative peritonitis. Autopsy showed perfect approximation, and the button still in position; the cause of peritonitis was not given. The ninth death was case No. 26. The patient died of septic peritonitis. The button was not pressed tightly enough and an edge of the stomach had slipped away.

It will be noticed that four of the nine deaths resulted from exhaustion, two from imperfect operation, and three from peritonitis from infection at the time of operation. Are we justified in operating in these extremely emaciated, cachectic patients with carcinoma of the pylorus? What is gained by such an operation? The patients, as a rule, survive the operation but for a very short period of time, when they succumb to the marasmus of the disease and not to the effects of obstruction of the pylorus. It is my opinion (and my practice is in accordance with it) that patients who are not in condition to withstand a pylorectomy should not be operated upon. The relief obtained, even when gastro-enterostomy is successful, is so temporary that it does not justify the danger and discomfort of the operation, notwithstanding that the operation can be performed with the button in from five to seven minutes. These patients suffer much more from shock in operation than those with non-malignant disease, and the regenerative power of tissues in a patient with malignant disease is much impaired, *i. e.*, it takes a much longer time to regenerate the tissues in these cases than it does in patients suffering from inflammatory lesions. Therefore, in this class of cases I scarify with the point of a needle the surfaces of the peritoneum of the stomach and intestinal wall where they are brought in contact; this hastens the primary adhesions and increases the rapidity of definitive union. A few interrupted sutures, one-half inch from the button, between the intestine and stomach, may be necessary when there is great traction of the coil of intestine approximated, but I have so far not found a case in which I considered it indicated. I prefer the position of von Hacker, though that of Wölfler may be used. I believe, with Dr. Willy Meyer, that the former favors the passage of the button into the intestine.

If the carcinoma involves but a small portion of the stomach in the neighborhood of the pylorus, the most satisfactory operation in its ultimate result is a division of the duodenum two inches below the pylorus, closing the proximal end with a Czerny-Lembert suture and joining the distal end to the posterior wall of the stomach with the button. In non-malignant strictures of the pylorus this is the only operation that should be performed. When the approximation has been made to the anterior wall of the stomach, the button has dropped back into the stomach in four cases; in none of them did it occasion any unpleasant symptoms, and I believe it would have passed as soon as the stomach contracted to its normal size and the patient was up and about for a considerable time. In the case reported by Zielewicz (*Centralblatt für Chirurgie*, No 37, 1894) the port-mortem report shows conclusively that the purse-string suture was outside of the clasp of the button. Furthermore, "an enormous meal of liver-sausage" six days after a gastro-enterostomy, as was given this patient, was not conducive to success, although it was not certain that it had anything to do with the death. I have not used the oblong button for this operation, and do not consider it necessary, as the results so far prove that the opening made by the circular button is ample, and that the scar does not contract. It has, however, certain merits. It produces a larger opening; it is more easily inserted than the circular button, and passes through the intestine with greater freedom, as its diameter is only five-eighths of an inch. The only two cases in which it has been used are the following:

Case No. 29, reported by Dr. Joseph D. Bryant, New York. Diagnosis: fecal fistula of long standing. There had been several previous operations for its closure; it was believed to connect with the transverse colon. Operation was performed on May 9, 1894. Lateral approximation was made of the ileum to the descending colon with an oblong button (two-and-a-half inches in length); the button was easily inserted. Convalescence was uneventful. The button was passed on the fifteenth day. Dr. Bryant was the first to use the oblong button on the human subject. I am much pleased to know that the button passed at such an early day, as the oblong button causes a larger area of pressure-atrophy than the circular one.

Case 84, reported by Dr. Willy Meyer, of New York, was a male, aged twenty-two, who had a fistula in the right inguinal region. There was a history of appendicitis; the abscess was opened by a physician; a fecal fistula followed. Celiotomy was performed on May 31, 1894. Chronic appendicitis was found, and the appendix was imbedded in dense adhesions and perforated; resection of the appendix was performed; a loose tampon was inserted, and followed by the appearance of a fistula which baffled treatment. On August 16, 1894, ileo-colostomy was performed with the aid of Murphy's oblong button (two-and-a-half inches in length, five-eighths of an inch in width). The button worked like a charm. Its two halves could be tied in with great ease, and did not require a longer slit in the gut for insertion than the ordinary button. Recovery followed. The button was voided without any difficulty on the tenth day.

Conclusions.—1. Gastro-enterostomy should never be performed on an extremely cachectic patient.

2. The position of von Hacker is the preferable one.

3. A supporting suture outside of the button is not necessary except for the relief of tension.

4. In non-malignant stricture of the pylorus the end of the duodenum should be united to the posterior wall of the stomach.

5. Pylorectomy by the method to be described should always be resorted to when possible.

6. The patient should receive liquid nourishment immediately after the effects of the anesthetic have passed away.

Pylorectomy.—Pylorectomy is always the most desirable operation for malignant stricture of the pylorus, as it is the only one that offers hope of prolonging the life of the patient for a considerable time. When it is successful the patient regains his usual vigor and temperament rapidly, and is in good physical condition until the disease recurs. The period of immunity frequently extends over many months, and occasionally years. By the use of the button the operation of pylorectomy is relieved of its greatest dangers—of shock, as the time consumed in operation is very much lessened, and also of leakage at the seat of approximation. The operation is best performed in the following manner: *First*, ligate the mesentery on the upper side of the stomach, pylorus, and duodenum, as a broad pedicle, with from three to five double ligatures, and cut between; *second*, ligate the mesentery on the under side in the same manner. The pylorus can then be lifted well up in the abdominal incision; *third*, pack thoroughly around with gauze and place two clamps on the stomach, one above and the other below the place to be incised; *fourth*, a circular incision is then made in the stomach, including the peritoneum and muscularis. This is pushed back half an inch and the mucous membrane cut off; the latter is rapidly closed with a continuous suture; the serosa and muscularis are then closed with a continuous Lembert suture. Two clamps are placed on the duodenum, and it is incised; *fifth*, one-half of the button is then placed in the end of the duodenum and the other half in the posterior wall of the stomach, one inch from the line of suture, and pressed together. We had four operations of this kind reported, with three recoveries. In all of the latter the button passed on through the duodenum.

The first case was that of Dr. A. H. Ferguson, operated upon July 25, 1893. The patient is still living and in excellent health, having gained sixty pounds in weight. The second case was that of Dr. Willy Meyer. The patient died several months after the operation. The third case (No. 85) died five days after operation. The patient was in an extremely emaciated condition, and, while the operation lasted only forty minutes, he was in a critical state all the time until he died. The fourth case (No. 78) was reported by Dr. M. H. Everett, Lincoln, Neb. The patient, a male, aged thirty-five, first complained of stomach-trouble eleven years ago. He has never been free from pain since. Five years ago he commenced to vomit, and during the five years he had not passed a day without vomiting. He is a very intelligent man, and gave a fair history of his trouble. He believes that nothing had passed down from his stomach for four or five months previously to operation. He came under my charge in November, 1894. His stomach was very much distended, and there was a tumor perceptible at the pylorus. Operation was undertaken on December 18, 1894; the incision was in the median line and four inches in length; the tumor was drawn out; there were no adhesions; the tumor was as large as a small turkey-egg; the mesentery was ligated and divided; the stomach was incised one inch from the growth, and a Czerny-Lembert suture used; the duodenum was divided one inch from the growth; an incision in the posterior wall of the stomach was made, and the duodenum joined to it with the button. Certainly not five minutes were spent in making the anastomosis. The abdomen was closed without drainage; the temperature on the next day was 99° for a few hours, after which time it remained normal. The button was passed in two hours less than fourteen days after the operation. A wonderful change is noticeable in the man. He has not vomited, nor has he been nauseated. His appetite is enormous, and at this day, twenty-two days after operation, he has gained twenty pounds. The tumor was found to be a fibroma.

Cholecystduodenostomy.—The results of the operation of cholecystduodenostomy with the aid of the anastomosis-button have been most satisfactory. There have been thirty-eight operations reported for cholelithiasis, with thirty-seven recoveries and one death. In Case 26, the patient lived for seven days following the operation. There was a continuous hemorrhage from the laceration of the liver from separated adhesions. A large quantity of blood was found in the peritoneal cavity on autopsy; perfect union existed between the bowel and the gall-bladder, and there was no peritonitis. These results were obtained by twenty-two different operators. In my first article on this subject I recommended the removal of only a sufficient number of gall-stones to allow of the insertion of the button. I early abandoned this method, as I saw that it was possible for calculi to remain in the diverticula of the gall-bladder after the button had passed. That this opinion was well grounded was shown in case No. 2, which was referred to me by Dr. J. H. Hoelscher:

Operation was performed on August 19, 1892. The patient made an excellent recovery. The button was not found, and the patient's condition continued good until December, 1894, when she was again attacked with colic in the region of the gall-bladder. This was not accompanied by jaundice; neither were her attacks before the first operation. A cholecystostomy was performed, and two large calculi were found in a pocket at the upper end of the cystic duct. The gall-bladder, from the fundus down to the calculi, a distance of two-and-one-half inches, had contracted to a tube about the diameter of a lead-pencil. The button was not there, having evidently passed unnoticed; the stones were crushed and removed; the patient made an excellent recovery.

This is the only case in which there was a recurrence of the symptoms after the operation, and supports the view advanced in my original article, that the gall-bladder would contract to a tube, and that the opening between the gall-bladder and the intestine would become so small by the contraction of the gall-bladder that it would not admit feces into the tract. We have no case of infection of the liver or gall-tracts reported as a result of the operation. I believe, with Ruth, Willy Meyer, Ferguson, and others, and experience supports the position, that there is no danger from this source. A failure of union has not occurred in a single case. This is a most striking contrast in this particular to the results obtained with the suture. The theoretic objection expressed, that the button might drop into the gall-bladder and be retained there, has not been supported by a single case. The danger of hemorrhage in patients suffering from cholemia is very great ; many of them have purpura hæmorrhagica before the operation. The greatest precaution should be exercised in lacerating adhesions in this class of cases, as the hemorrhage may continue for days and even weeks.

The operations of cholecystenterostomy for malignant disease were very unsatisfactory, as there were eight performed, with seven deaths. Two died of shock, and one from twisting of the small intestine before making the approximation, producing a volvulus. In one case the gall-bladder was so friable from malignant disease that it tore like wet paper when the sutures were inserted, and after the button was placed in position and the abdomen closed the friable wall gave way and peritonitis ensued. In all of the others the approximations were found perfect on autopsy. While the mortality from the operation is great, not one of the deaths could have been attributed to the method. Still they all tend to show that the operation for malignant disease is not a justifiable one, and in many of my recent exploratory operations, when I have found a large carcinoma of the pancreas, duct or neck of the gall-bladder, I have abandoned the operation, and all of the patients have survived the exploration.

Cholecystenterostomy is contraindicated in gangrene of the gall-bladder. These cases should be opened and drained externally, and the peritoneum thoroughly protected by packing. The indications for the operation of cholecystenterostomy are :

1. Obstruction of the common duct.

2. Obstruction of the cystic duct, when cholecystectomy is impracticable.

3. Chronic cholecystitis, with thickening of the wall of the gall-bladder.

4. Fistula of the gall-bladder when the patient is emaciated from the loss of bile.

5. Carcinoma of the head of the pancreas in the early stage.

Intestinal Approximation.—It is in this field that the button has been of the greatest practical value. The pathologic conditions demanding its use in this class of cases greatly endanger the life of the patient. The cases may be well classified as follows:

1. Resection of the bowel for gangrene. (*a*) For internal obstruction ; (*b*) For hernia.

2. Resection of the bowel for cure of the fecal fistula.

3. Resection for malignant growths.

4. Resection for perforations of the intestine, both traumatic and pathologic.

5. Resection of the rectum.

Of the resections for gangrene of the bowel from internal obstruction we have fourteen cases and one death—case 64. The patient was a child that had suffered from a four-weeks' obstruction. She was so weak and emaciated when operated upon that she never rallied, and died in twenty-four hours. Of the resections for gangrenous hernia there were twelve, with two deaths. The first case, No. 4, died forty-eight hours after an operation for strangulated umbilical hernia which had perforated into the abdomen. A general septic peritonitis existed at the time of the operation. The autopsy showed continuation of the peritonitis, with perfect approximation, and the button in position.

The second case, No. 79, was a very interesting one, the patient having a congenital hydrocele of the testicle, with an inguinal hernia in a separate sac. The sac of the hydrocele connected with the sac of the hernia at its neck. The patient, after severe exertion, found his hernia down and painful. It was reduced in the usual manner, but the pain and vomiting continued. Six days after the obstruction occurred he was brought to me by Dr. Hanna, from Winfield, Iowa, who had seen him only a few hours before, and had made the diagnosis. I found the hernial sac free and empty, but a Littré hernia, involving four-fifths of the circumference of the bowel, was strangulated in the small opening of the hydrocele-sac. This knuckle had perforated into the sac, and the lining of the sac was gangrenous from the infection. A resection of five inches of intestine was made, together with an end-to-end approximation, the approximated intestine returned, and the abdomen dressed open. The patient's bowels moved six times within the next eight hours. He did not vomit, but his pulse increased in frequency, his facial expression became bad, and he died thirty hours after the operation, with all of the symptoms of auto-intoxication from the decomposing proteids that had been retained in the alimentary canal. There was no peritonitis. This case shows how important it is to act upon the symptoms of obstruction following an apparently complete reduction of a hernia.

Of resections for fecal fistula, with end-to-end approximation, there have been nine cases reported, all of which recovered. Here the results show that the operation of resection, with end-to-end approximation, promises much more for the patient than the lateral approximation, both for the immediate relief of the fistula and the permanent cure, and I now perform it in all cases in preference to the lateral. The relative value of the two operations is illustrated in case No. 45 in this report, and case No. 10 in the *Chicago Clinical Review* for June, 1894:

The patient had suffered for a period of two years from a fecal fistula, following a celiotomy for adherent ovarian cyst. It resisted all efforts at closure. An incision was made in the abdomen, and the two ends of the intestine which led to the fistula were approximated laterally with the button. The patient recovered nicely from the operation, but the fistula remained open. A plastic operation was done for the closure of the fistula, but it failed. The patient was continually emaciating, as the fistula was high up in the bowel. Nine months after the lateral approximation a second operation was performed. The fistulous tract was dissected out down to the peritoneum and ligated. A median incision was then made, and the adhesions of the intestine around the fistulous opening were separated, and the fistula and adherent intestinal coil drawn out of the abdomen. It was then found that two loops of the intestine were leaking at the seat of the fistula, and that only one loop had been relieved by the lateral approximation performed nine months previously. A resection of twenty-five inches of the intestine was practised, including both fistulæ, the entire adherent loop and the seat of the lateral approximation, and the bowel joined end-to-end with button No. 3. The patient made a rapid recovery. Four weeks after the approximation the button was found resting in the rectum. The opening made by the button used in the lateral approximation measured five inches at the time the specimen was removed, while the circumference of the button was only three-and-a-half inches, showing that the opening did not contract, but had expanded. (Expansion of the opening was also noticed in a case operated on by Dr. T. A. Davis, in which the specimen was removed several months after the operation.) The patient has increased in weight, and is now performing the duties of a domestic.

We have a total of forty-one resections for non-malignant disease, with two deaths. If to these be added the seven cases of Dr. Joseph Price, the details of which I have not received, with six recoveries, we have a total of forty-eight cases, with three deaths. The first death (case 4) resulted from continued peritonitis, the second death (case 79) from auto-intoxication. In Dr. Price's case the death occurred twelve hours after the operation, from shock. The operation consisted in the removal of an enormous universally-adherent fibroid, and the excision of several inches of bowel and a portion of one ureter. These results, obtained in the hands of many operators, certainly indicate that the question of operation in gangrenous hernia, internal obstruction, and fecal fistula, is definitely settled, *i. e.*, that resection with end-to-end approximation yields all that could be expected in the way of results.

Resection of the intestine, with end-to-end approximation, does not furnish as good results for malignant disease as for non-malignant, as is the case with all operations for malignant disease. Still, when we review and analyze these results they show a great improvement over those obtained by other methods, and are, on the whole, very satisfactory. There were thirty operations, with seven deaths. These include eight resections of the cecum, with one death. The cause of death in the malignant cases was as follows: In case No. 30, infection from without during the operation. A perfect approximation was found on autopsy. Case No. 35, from shock; death occurred ten hours after the operation. Case No. 56, from peritonitis. The specimen showed that there was no evidence of attempt at union at the seat of approximation, and that the peritonitis was present from the time of operation. Case No. 71 died of peritonitis. A specially large-sized button, one-and-a-half inches in diameter, was used. It fitted the intestines too snugly and produced a sloughing over the surface of the button, with perforation. In operations, as well as in experiments on the dog, this important factor should not be overlooked, that the button should fit easily in the intestine. Case No. 74 died of fatal peritonitis. The operator, in explaining the cause of the gangrene of both ends of the bowel, attributed it to the length of time that the ends were compressed during the operation, and this conclusion is certainly supported by the fact that both ends were gangrenous, that the perforation occurred, not at the seat of the pressure-atrophy, but beyond the margin of the button. If the gangrene had resulted from the button itself, it would have involved but one end of the intestine, and would have taken place at the position of pressure-atrophy, *i. e.*, at the junction of the button. The intestinal clamps that I use on the intestine, to prevent the escape of feces and gas, cannot produce this condition, as they do not compress the parallel artery of the bowel, which is surrounded by a cushion of fat in the triangle made up by the division of the peritoneal surfaces of the mesentery and the wall of the bowel. This artery is the most important one for the nutrition of the bowel, as is shown by my experiments on the intestine. In case No. 81 death occurred shortly after operation, but the cause was not reported. Finally in case No. 90 death resulted from exhaustion five days after operation. (See report.)

Resection for Perforations of Intestine, Traumatic and Pathologic, with End-to-end Approximation.—The mortality from perforations, both from gunshot wounds and for perforating ulcers, has always been very great, not that the danger resides in the operation for repair, but in the pathologic conditions themselves. Leübe, in his collection of 322 cases, found that when the operation was performed within twelve hours after pathologic perforation the mortality was 58.2

per cent.; if later than twelve hours, 79.5 per cent. In bullet-wounds of the abdomen the collapsed condition of the patient, the profuse hemorrhage, and the shock of the nervous system, all contribute very greatly to the mortality. The treatment of these cases, the practice of evisceration, now in vogue, to determine the number of perforations, and to be certain that none remain open, I consider excessive surgical precaution. We can estimate with great accuracy the position of the wound in the bowel by calculating the course of the bullet from the point of entrance to the position in which it is lodged. We are assisted very much in locating the bullet by the ingenious telephonic bullet probe of Dr. J. H. Girdner, of New York. The rule in bullet-wounds is that there are two perforations of the small intestine and none other, or two or more of the small and none of the large, or thirdly, the most common condition, there are a large number of perforations of the small intestine in close proximity, and, exceptionally, an additional perforation of the large intestine. This relation is accounted for, first, by the more or less irregularly transverse arrangement of the coils of the intestines, and, second, that a bullet rarely passes in the direction from head to foot, or the reverse. It more commonly passes either, first, from before backward, in which case we have one or two perforations; or, second, transversely, and we then have many perforations in close proximity, from three to fifteen in number, and situated very closely, *i. e.*, we may have as many as ten or twelve perforations within twenty inches of intestine. It is not necessary to eviscerate in order to locate them. They are in close proximity, and can be easily recognized. The operation should consist in resection of the entire perforated coil, an end-to-end approximation, with drainage of the cavity. When the perforations are a greater distance apart, double resections may be made and two buttons inserted, as in case No. 66, reported by Dr. R. R. Williams, of Manning, Iowa:

The patient was a male, sixteen years old. On August 7, 1894, he was injured by the bursting of a fly-wheel, rupturing the abdominal wall from the symphysis pubis to the umbilicus, the bowels protruding. Operation was performed six hours after the accident. On opening the abdominal wall it was found that a two-inch opening in the bladder existed, and the intestine was completely severed in two different places. The bladder was sutured. The bowel was united end-to-end with two Murphy buttons. The patient's convalescence was good except for extensive urinary infiltration. The buttons were both passed on the eighteenth day. The infiltration and necrosis continued, and the patient finally succumbed to the sepsis. This is the first successful case of double intestinal anastomosis with the buttons at one sitting.

Case 83.—For details of this very interesting case by Dr. F. H. Wiggin, see the *New York Medical Journal* of December 1, 1894. The operations for pathologic perforation of the intestinal tract are, as a rule, deferred too long. The profession has not yet extricated itself from the erroneous belief that the symptoms of collapse occur immediately after the perforation takes place. I would enunciate the following rule, and it should be impressed on the mind of every physician: *the manifestations of perforation into the peritoneal cavity depend upon the character and quantity of material admitted into the cavity and the pathologic changes produced thereby in the peritoneum.* By this I mean that the symptoms are not the result of the perforation *per se*, but the result of the pathologic changes produced by the result of perforation. To illustrate this law: In one case we will have a perforation of the intestine that will give rise to but slight symptoms of pain, nausea, discomfort, and local tenderness, but little elevation of temperature. This is the common train of symptoms produced primarily by a typhoid ulcer, and the symptoms may continue mild for a number of hours or days, even to a short time before dissolution, when symptoms of collapse occur. On the other hand, when we have a perforation of the stomach or the perforation of a peri-appendiceal abscess, the rupture of a pus-tube, etc., intense pain, great tenderness, nausea, vomiting, gulping, an anxious expression, a rapid thready pulse, and cold perspiration, take place more rapidly; but it should be distinctly understood that these are symptoms of pathologic changes in the peritoneum, and may not occur until a long period of time after the perforation has taken place, and are due to (*a*) extensive peripheral-nerve irritation, (*b*) toxemia, and (*c*) bacterial infection.

LATERAL APPROXIMATION.—There have been four operations of lateral approximation for malignant growths, with two deaths, and six for non-malignant disease; all of the cases recovered.

RESECTION OF THE RECTUM.—This operation has been relieved of its most trying mechanical part, *i. e.*, the difficulty of drawing down and approximating the upper to the lower segment, suturing it there and still retaining the sphincter intact. There have been reported three resections, with recoveries, and two lateral approximations, that is, approximations around the strictures with a pressure-atrophy of the stricture, a method in which the button is used, devised and described by Dr. Bacon in the *New York Medical Record*, December 10, 1892. The operation of resection, with removal of the sacrum (Kraske) and end to-end approximation with the button, was first done by Dr. Henry O. Marcy, of Boston, October 16, 1893. (Case 13, *Medical Record*, June 26, 1894.) The method of procedure for resection of the rectum is as follows: 1. In order to perform the operation without removing the coccyx or sacrum (Kraske), it is necessary to be able to reach the upper margin of the carcinoma with the index-finger. 2. The sphincter should be dilated until it is completely paralyzed; the carcinoma should be drawn down with forceps, and the rectum packed with gauze above. 3. A puckering-string should be inserted in and out through the wall of the rectum, one-half inch below the carcinoma, and left perfectly loose, so that the bowel may retain its entire caliber. 4. A circular incision is now made through the entire wall of the rectum, one-quarter of an inch above the suture and between it and the carcinoma. 5. The carcinoma and rectum are then liberated from the surrounding connective tissue, and the latter is drawn down as a cylinder into the lower segment of the rectum, and the separation continued until we are well up above the carcinoma. If the patient be a female, we shall find the cul-de-sac firmly adherent to the rectum, usually at the seat of the carcinoma. It should be cut open, the portion adherent allowed to remain, and immediately sewed with a fine catgut suture. The separation can extend up as far as necessary. One-half inch above the carcinoma another puckering-string is inserted, and a circular incision is made a quarter of an inch below this, cutting out the carcinoma. The gauze-packing is then removed. 6. The male portion of the button in which is threaded extremely heavy braided silk, double-drawn through the cylinder, is placed above, and the upper puckering-string tied around the cylinder of the button and cut short. The stem is held with a small forceps. (Do not use a heavy forceps to hold the button, as it presses the cylinder out of shape, thus preventing the button from closing.) 7. Slide the female portion of the button over the string, and press it up until it barely catches the end of the male cylinder, just sufficiently to hold. 8. Make a small parallel incision in the lower segment of the rectum over the coccyx and one-half inch below the first puckering-string inserted. Through this, pass a strand of iodoform-gauze for drainage outside of the button. (This may be removed on the third or fourth day, if necessary.) 9. Draw the button well down and tie the first puckering-string around the conjoined cylinders; cut the suture short and press the button together by making traction on the cord and pressing up from below. 10. Have the bowels loose before the operation, and keep them loose afterward, until the button frees itself, or can be liberated by slight traction about the tenth day. Use heavy silk both for the puckering-string and for traction-cords, as it is very unpleasant to have either break. Do not press the button too closely together before tying the second puckering-string. The traction-cords may be left in place until the button is removed.

CONCLUSIONS.—1. The cicatrix caused by the use of the button does not contract.

2. Size No. 1, ¾ inch, or 0.02 m., or No. 2, $\frac{13}{16}$ inch, or 0.022 m., should be used for cholecystenterostomy. I prefer No. 2.

3. End-to-end, side-to-side, and end-to-side approximation of the small intestine should be made with button No. 3, $\frac{15}{16}$ of an inch, or 0.025 m., in diameter.

4. End-to-end and side-to-side approximation of the large intestine should be made with button No. 4, 1 inch, or 0.026 m., in diameter.

5. A specially large size, 1¼ inch, or 0.029 m., in diameter, with a long male cylinder, may be used in some cases of resection of the rectum with advantage. But it should not be used unless it fits loosely.

6. In intestinal obstruction, resection, with end-to-end union, gives better results than lateral approximation, and should always be performed when practicable. The same operation should always be done in gangrenous hernia. In fecal fistula the bowel should be resected and united end-to-end.

7. The patients should receive liquid nourishment as soon as the effect of the anesthetic passes off. The bowels should be made to move as soon as possible after the operation, and frequent evacuations should be kept up.

8. If the button does not pass in three or four weeks, the rectum should be examined, as the button may rest just inside the sphincter.

9. There has been one case reported of occlusion of the button by fecal impaction in the cylinder. This can be easily avoided by a mild cathartic immediately after the operation.

10. When returning the intestines to the abdomen they should be placed in parallel lines, especially at the seat of approximation, to prevent sharp curves and obstruction. This occurred once with the button; many are reported following suture.

11. There is no danger of obstruction from the button, as not a single case has been reported. This proves that the deductions made by Choput, of Paris, from experiments on the cadaver are erroneous.

12. There is no danger of extension of the pressure-atrophy beyond the line of pressure.

13. Primary adhesion may be hastened in malignant cases by abrading the peritoneum with a needle. It is unnecessary in non-malignant cases.

14. A supporting suture is never necessary to secure union, and should only be used to relieve tension when the viscera approximated are forced out of position.

RESECTION, END-TO-END APPROXIMATION. (METHOD: MURPHY BUTTON.)

No.	Date.	Publication.	Operator.	Diagnosis.	Operation.	Position	Result.	Cause of death.	REMARKS.
35	1893 Nov. 11	Annals of Surgery, 1894, p. 472.	Ricketts,	Carcinoma of ileum.—Obst.	Resection, end to end.	E. E.	D.	Shock, 10 hours.	Time for operation 10 minutes
36	1894 Jan. 29	Not published.	Middleton, W. D.	Carcinoma of rectum.	Resection, upper part of rectum.	E. E.	R.	....	Resection 2½ inches; completely cured. Button passed on 12th day.
37	Feb. 27	" "	Ferguson, A. H.	Carcinoma of cecum.	Extirpation of cecum, 14 in. of bowel.	E. S.	R.	....	Patient died 4 weeks later of diarrhea. Autopsy: perfect approximation; opening large as button; diphtheric colitis.
38	Feb. 27	Medical Record, September 15, 1894.	Stewart, W. W.	Gangrenous hernia.	Resection 10 in. small intestine.	E. E.	R.	.	Button passed 13th day. Patient in extreme condition when operated on—pulse 160. Rapid convalescence.
39	March	Not published.	Reed, Chas. A. L.	Carcinoma of cecum.	Resection part of cecum.	E. S.	R.	.... .	Button passed 22d day.
40	....	" "	Copeland.	....	Resection.	E. E.	R.	....	
41	April 2	" "	Newton.	Neoplasm of mesentery.	Resection, end to end.	E. E.	R.	......	Button passed 14th day (patient small child).
42	April 7	N. Y. Med. Journ., September, 1894.	Dennis.	Strangulated hernia.	Resection, ileum.	E. E.	R.	....	Button passed 22d day; wound suppurated; fecal fistula closed 27th day.
43	May 11	Matthew's Medical Quart., July, 1894.	Outerbridge.	Carcinoma transverse colon.	Resection, end to end.	E. E.	R.	......	Time for operation 1 hour 45 minutes; several inches of transverse colon resected.
44	May 12	Not published.	Meyer, Willy.	Intussusception; myxo-sarcoma.	Resection of ileum 3 inches.	E. E.	R.	....	Button passed 11th day; perfect recovery.
45	June 1	" "	Cobb, J. O.	Syphilitic stricture.	Anastomosis around stricture.	E. S.	R.	. .	Died 14 days after, pneumonia. Anastomosis perfect.
46	June 4	" "	Murphy, J. B.	Fecal fistula.	Resection, end to end.	E. E.	R.	.....	25 inches of small intestine removed. Opening made by button in previous operation dilated from 3¼ to 5 inches.
47	June 13	" "	Shimnneck, F.	Strangulated hernia.	Resection, end anast.	E. E.	R.	....	Button passed on 18th day.
48	June 15	" "	McCallum, J. L.	Strangulation of ileum.	Resection, end to end.	E. E.	R.	....	12 inches of ileum resected.
49	June 16	" "	Meyer, Willy.	Intestinal obstruction, sarcoma, intussusception.	Resection, ascending colon, 12 inches.	E. E.	R	..... .	Button passed 11th day. Discharged July 24, 1894; died of marasmus August 14, 1894. Autopsy: multiple sarcoma.
50	June 17	" "	Davis, F. A.	Penetrating wound abdomen, laceration of intestine.	Resection, end to end.	E. E.	D.	Shock, 3 hours	Patient never rallied from shock caused by injury.
51	June 18	N. Y. Med. Journ., Sept. 1894.	Lilienthal.	Carcinoma of trans. colon.	Resection, 6 in. trans. colon	E. E.	R.	. . ....	Button used 1¼ inches in diameter; passed 18th day without pain.
52	June 21	Not published.	Cochems, F. W.	Strangulated hernia.	Resection, end to end.	E. E.	R.	.. .	Resection of 26 inches. Button passed 180 hours after operation.
53	June 23	" "	Meyer, Willy.	Carcinoma of rectum.	Resection of rectum 8 in., Kraske-Rehn.	E. E.	R.	....	Death July 22d. Gangrene of lower end of sigmoid with fecal fistula above line of union, due to tension of meso-sigmoid. "Button accomplished purpose admirably." Voided 11th day.
54	June	" "	Cushing, W. F.	Malignant uterine myoma.	Resection, 6 in. descending colon.	E. E.	R.	. .	Six inches of descending colon imbedded in tumor resected with it.
55	Aug. 31	" "	Beck, Carl	Carcinoma of cecum	Resection of cecum.	L.	R.	....	Ends of intestine sutured. Lateral anastomosis with button No. 3.
56	Sept. 9	" "	Jones, W. B.	Malig. stricture of sigmoid.	Resection, 3 in. of sigmoid.	E. E.	D.	Peritonitis.	Death, 5 days after operation, of peritonitis. No effort at union from infection.
57	Sept. 13	" "	Davis, T. A. Chicago.	Fecal fistula.	Resection, 4 in. small intestine.	E. E.	R.	......	Fistula from gangrenous hernia.
58	Sept. 14	" "	Peck, Youngstown.	Appendicitis—adhesions.	Resection.	E. E.	R.	....	Obstruction, after operation for appendicitis, from adhesions.
59	Sept. 13	" "	Parkhill, Clayton	Fecal fistula (appendicitis).	Resection of ileum.	E. S.	R.	....	End of ileum cut off from cecum and attached higher up.
60	July 15	" "	Beaver, Daniel, Reading, Pa.	Gangrenous hernia—fistula.	Resection, 3 inches.	E. E.	R.	....	Button passed on 17th day. Temperature never reached 102°.
61	Oct. 16	" "	Carpenter, J. G., Stanford, Ky.	Intestinal obstruction.	Resection, late anast. around stricture.	E. S.	R.	....	Patient died on 8th day of angina pectoris; bowels moved four times in 24 hours, and continued to move regularly. No pain, tenderness, tympanites, vomiting, or elevation of temperature after operation. Patient died very suddenly.
62	Oct. 28	" "	Peck, George, Youngstown, O.	Intestinal obstruction.	Resection, 6 in. of sigmoid.	E. E.	R.	....	The contraction was produced by adhesions and a fecal fistula following an operation for pyosalpinx two years previously.
63	Sept. 7	London Lancet, Oct. 20, 1894.	Swain, Paul	Intestinal obstruction.	Resection, 5 in. of ileum.	E. E.	R.	....	Obstruction existed a long time. Proximal end 12 inches; distal contracted; button voided 10th day.
64	Oct. 25	... .	Mullins, Chas D., Ansley, Neb.	Intestinal obstruction of 4 months' standing.	Anastomosis of ileum and colon.	L.	D.	Exhaustion, 24 hours.	Child in extreme condition when operated, having had 4 weeks of intestinal obstruction; ileum strangulated through an opening in its mesentery; peritoneum entirely covered with flakes of lymph; no liquid pus.
65	July 5	Not published.	Day, Donold D., Norwich, Eng.	Intestinal stricture.	Resection, 10 inches.	E. E.	R.	....	Button voided in two months producing no unpleasant symptoms. Bowels moved regularly from time of operation.

66	Aug. 7	Not published.	Williams, R. R., Manning, Ia,	Double rupture of intestine, traumatic.	Resection (double).	E. E. double	R.	…………	Both buttons voided in 18 days. Bowels moved daily from time of operation; no elev. temp. or other unpleasant symptoms; patient had extensive laceration of bladder from which he died later.
67	July 11	" "	Abbe, Robert, New York.	Ileo-colic anastomosis.	Resection of caput coli.	E. E.	D.	…………	Patient died from intestinal obstruction by hardened feces in the button, notwithstanding an ileostomy had been performed.
68	June 9	Omaha Clinic, October, 1894.	Summers, J. E., Omaha.	Intes. obs. (5 days) by malig. growth of sigmoid.	Anastomosis around tumor.	L.	D.	Shock, 25 hours after operation.	Patient in such extreme condition that resection was not deemed advisable; small intestine opened to allow contents to escape that the bowels might be replaced. Anastomosis made in ten minutes. Patient never rallied from shock.
69	June 13	Omaha Clinic, October, 1894.	Summers, J. E., Omaha.	Tuberculosis of tube involving sigmoid.	Removal of tube, resection of 5 inches of sigmoid.	E. E.	R.	…………	Tuberculosis involved four inches of sigmoid; perfect recovery.
70	………	Med. Week, Dr. Richelot, Paris, Nov. 9, 1894.	Hartmann, Paris.	Ileo-cecal inflam. adhesions.	Resection of cecum.	E. E.	R.	…………	"Button should be considered a great advancement in technique; much better than any other method. Resection of adherent ileum, cecum, and colon."
71	June 1	Not published.	Abbe, Robert, New York.	Carcinoma of descending colon.	Resection of growth and loop of intestines.	E. E.	D.	Peritonitis.	A special, large-sized button 1½ inch in diameter used; fitted intestine snugly; sloughing of bowel over button due I fear to tension and pressure of metal on account of large size and weight; button from former anastomosis in some cases found resting in loop close to growth; caused no inconvenience (April 27, 1894).
72	Nov. 24	" "	Murphy, J. B.	Gangrenous femoral hernia, 4 days.	Resection, 8 inches ileum.	E. E.	R.	…………	A sac full of feces, bowel ruptured, resection to sound tissue; drained; four bowel-movements in six hours; perfect recovery.
73	July 19	" "	Bell, James, Montreal.	Intestinal obstruction, perforation, adhesions.	Resection, 4 inches small intestino.	E. E.	R.	………	Bowel ulcerated, perforated large intraperitoneal pocket; another perforation lower down; this was sutured. Abdomen closed. Recovery. Tumor not removed.
74	Sept. 11	" "	Bell, James, Montreal.	Intestinal obstruction, tumor involving bowel.	Resection, 3 in. sigmoid with tumor (carcinoma).	E. E.	D.	……	First button found free in splenic flexure above the obstruction caused no trouble. Sigmoid tumor resected; time two hours; elastic tube used to prevent escape of feces; operation difficult. Death four days later. Ends of bowels both gangrenous in whole circumference; perforation had taken place just beyond the border of the button; fatal peritonitis.
75	Oct. 18	" "	Bell, James, Montreal.	Femoral hernia, gangrene.	Resection, 11 in. ileum.	E. E.	R.	……	Sac contained effusion bloody serum. Mesentery peeled back from bowel after uniting, so a second resection was made immediately. Abdomen closed and radical cure made. Perfect recovery, primary union. Button voided tenth day.
76	Nov. 1	" "	Murphy, James, Sunderland, Eng.	Ileus.	Resection, 6 in. small intestine.	E. E.	R.	……	The intestine was bound down by a band of fibrous tissue obliterating 6 inches; resection; button passed on 21st day; perfect recovery.
77	Oct. 15	Med. Week, Dec. 7, 1894.	Ullmann, Vienna.	Carcinoma of cecum.	Resection, 26 inches.	E. E.	R.	………	Patient made an excellent recovery, and was exhibited before Medical Society six weeks after operation.
78	Dec. 18	Not published.	Everett, M. H., Lincoln, Neb.	Tumor of pylorus.	Resection, 4 in. stomach, 2¼ inches duodenum.	E. S.	R.	…	Button passed 13 days after operation; patient's temperature never above 99°. End of duodenum united to posterior wall of stomach. Uneventful recovery.
79	Dec. 30	" "	Murphy, J. B.	Strangulated inguinal hernia, 6 days.	Resection, 5 in. small intestine.	E. E.	D.	30 hours' sapremia.	Bowel gangrenous, perforated, congenital hydrocele sac full of pus, large quantity of serum in peritoneal cavity; bowels moved six times in first 24 hours; pulse increased continuously in frequency; delirium, no vomiting; death from sapremia.
80	Nov. 7	" "	Griffith, J. D., Kansas City	Rupture of intestine, septic peritonitis.	Resection, — inches.	E. E.	D.	12 hours' shock, sepsis.	Gas and feces passed off freely through the bowel.
81	Dec. 18	" "	Griffith, J. D., Kansas City.	Stenosis, ileo-cecal.	Ileo-colostomy.	S. S.	R.	…………	Button passed 21st day.
82	Mar. 20	" "	Griffith, J. D., Kansas City.	Gunshot wound of large intestine.	Resection.	E. E.	D.	Shock, 2 hours.	Death 60 hours after operation from obstruction by adhesions of intestines in a sharp angle at seat of operation, producing obstruction. Line of union in both places barely visible; pressure-atrophy almost complete at seat of adhesions, where adherent bowels protected line of union.
83	July 7	" "	Wiggins, F. H.	Double perforation, traumatic.	Double anastomosis.	E. E.	R.	……… …	
84	Aug. 16	" "	Meyer, Willy.	Fecal fistula.	Ileo-colostomy.	S. S.	R.	…………	Oblong button used in this case, which passed on the 10th day without pain or difficulty.
85	Sept. 30	…………… ..	Wittwer, H. R.	Carcinoma of pylorus.	Pylorectomy.	E. S.	D.	Exhaustion 5th day.	Time consumed in operation 40 minutes. Autopsy: peritoneum dry; no peritonitis; firm union of end of duodenum to posterior wall of stomach. Button still in position; stomach very much contracted and full of cherry-pits, lima-beans, and grape-seeds; many of them had passed through button.
86	Oct. 24	Centlbl. für Chir., No. 52, 1894.	Plettner, A., Dresden	Carcinoma of cecum.	Resection of cecum.	E. E.	R.	………	Button passed on 14th day without being noticed by patient; discharged on 21st day.
87	Oct.	Not published.	Reeve, J. C., Dayton.	Fecal fistula (hernia).	Lateral ap.	S. S.	R.	…	Button voided on 15th day; uneventful convalescence; rapid improvement in condition.
88	Sept. 20	" "	Bacon, M. W. Cory, A. L., Englewood.	Pyosalpinx, tubes adherent.	Resection trans. colon 8 in.	E. E.	R.	. .	Button voided on 8th day; uneventful recovery.
89	July 1	" "	Davis, T. A., Chicago.	Fecal fistula from hernia.	Resection, 4 inches.	E. E.	R.	…………	Button voided on 20th day; uneventful recovery.
90	Nov. 9	" "	Lee, E. H., Chicago.	Gunshot wound of abdomen.	Resection, double.	E. E.	D.	Shock and hemorrhage.	Two large perforations of large mesenteric arteries, very profuse hemorrhage; 12 perforations of bowel; two resections of about 12 inches; time of operation 47 minutes. Patient exsanguinated. Autopsy: no peritonitis, perfect approximations. Death 36 hours after operation.

CHOLECYSTDUODENOSTOMY FOR CHOLELITHIASIS. (METHOD: MURPHY BUTTON.)

No.	Date.	Publication.	Operator.	Diagnosis.	Operation.	Position	Result.	Cause of death.	REMARKS.
23	1893 Oct.	Not published.	Ferguson, A. H.	Gall-stones.	Cholecystduodenostomy.	S. S.	R.		Excellent recovery.
24	1894 Feb. 6	Medical Record, Sept 15, 1894.	Moffatt, H., Yonkers, N.Y.	Cholelithiasis after cholecystostomy.	Cholecystduodenostomy.	S. S.	R.	......	Patient had previous cholecystostomy, November, 1893. 14 calculi removed; symptoms returned and cholecystenterostomy done.
25	Feb. 22	Not published.	Ferguson, A. H.	Gall-stones.	Cholecystduodenostomy	S. S.	R.		Excellent recovery.
26	March	" "	Bradley, Peoria, Ill.	Obstruction common duct.	Cholecystduodenostomy.	S. S.	D.	Exhaustion 7th day.	Post-mortem: Profuse hemorrhage from liver where it had been torn during operation in freeing adhesions. Approximation perfect. Time of operation 40 minutes.
27	Mar. 23	" "	Ferguson, A. H.	Gall-stones.	Cholecystduodenostomy.	S. S.	R.	..	Excellent recovery.
28	April 17	Buf. Med. and Surg Journ., July, 1894.	Mynter.	Cholelithiasis, enlarged gall-bladder.	Cholecystduodenostomy.	S. S.	R.	......	Rapid recovery. Button passed 22d day; 126 gall-stones.
29	May	Not published.	Bradley, Peoria, Ill.	Cholelithiasis, dilatation of gall-bladder.	Cholecystduodenostomy.	S. S.	R.	......	150 calculi. Button passed 40 days after operation.
30	May 16	" "	Parkhill, Clayton	Gall-stones.	Cholecystduodenostomy.	S. S	R.		Button passed 22d day. Convalescence uneventful.
31	July 26	" "	Burdick, G. G.	Cholelithiasis—obstructive	Cholecystduodenostomy.	S. S.	R.	......	Button passed 14th day. Large calculus allowed to remain in choledochus.
32	Aug. 17	" "	Middleton, W. D. Davenport.	Cholelithiasis—obstruction of choledochus.	Cholecystduodenostomy.	S. S.	R.	....	Gall-bladder found contracted to size of hickory-nut; stone half size that removed; obstruction due to fibroid degeneration along entire length of duct Smallest-sized button used; rapid convalescence.
33	Sept. 8	" "	Murphy, J. B.	Cholelithiasis—obstruction of cysticus.	Cholecystduodenostomy.	S. S.	R.	..	Time of operation 20 minutes. Difficulty experienced in pressing large calculus from cystic duct back into gall-bladder; 60 calculi removed.
34	Sept. 15	" "	Murphy, J. B.	Cholelithiasis—obstruction of cystic duct.	Cholecystduodenostomy	S. S.	R.	.	Gall-stones as large as filbert impacted in cystic duct removed through gall-bladder, which was full of mucus; no bile; patient never had jaundice or colic. Time of removing calculus and making anastomosis, 6 minutes; time of entire operation, 16 minutes.
35	Sept. 15	Pittsburg Med. Rev., p. 253.	Werder, X. O., Pittsburg.	Cholelithiasis.	Cholecystjejunostomy; closure of fistula.	S. S.	R.		Button passed 27th day.
36	Nov.	Not published.	Murphy, J. B.	Cholelithiasis—cholecystitis.	Cholecystjejunostomy.	S. S.	R.		A pure cholesterin calculus $\frac{5}{8}$ inch in diameter removed. Button passed 18th day, after severe vomiting. The largest-sized button was used, as the small one had a spring broken from being carried in the pocket.
37	....	" "	Johnson, Geo. B. Long, J. W., Richmond.	Cholelithiasis—occlusion of common duct.	Cholecystduodenostomy.	S. S.	R.	......	Gall-bladder firmly adhered to colon; Paquelin cautery used for hemorrhage; gall-stones removed: button passed 19th day with two stones. Uninterrupted recovery.
38	Nov. 11	" "	Morris, E. V. D. Galesburg.	Cholelithiasis—enlarged gall-bladder.	Cholecystenterostomy.	S. S.	R.	....	Eight ounces of bile in gall-bladder, time 30 minutes; discharged from hospital in 16 days; button voided 11 days.

CHOLECYSTENTEROSTOMIES IN MALIGNANT CASES. (METHOD: MURPHY BUTTON.)

No.	Date.	Publication.	Operator.	Diagnosis.	Operation.	Position	Result.	Cause of death.	REMARKS.
3	1894 Feb. 2	Not published.	King, Ernest W.	Carcinoma of pancreas.	Cholecystduodenostomy.	S. S	D.	Death on 4th day.	No peritonitis; cholemic hemorrhage from all mucous surfaces of the body.
4	March	Buf. Med. and Surg. Journ., July, 1894.	Mynter, Buffalo, N. Y.	Stenosis of common duct.	Cholecystduodenostomy.	S. S.	D.	Prostration.	No peritonitis; perfect adhesions; multiple carcinoma of pancreas and liver.
5	Sept. 24	Not published.	Hartley Frank, New York.	Malignant obstruction of common duct.	Cholecystcolostomy.	S. S.	R.	....	Button passed.
6	1893 Jan.	" "	Dawbarn, R. H. M. New York.	Cholelithiasis.	Cholecystduodenostomy	S. S.	D.	Peritonitis.	It was found on introducing the suture that a carcinoma of the gall-bladder as well as gall-stone existed. When the sutures were introduced they tore through the carcinomatous wall as if it were wet paper; the smallest-sized button was finally placed and the intestine approximated; death from septic peritonitis; autopsy showed the friable gall-bladder gave way from the clasp of the button. As far as I can learn this was the first time the

									button was used in New York. Dr. Dawharn comments: "This case should not count against the method for the reasons mentioned. I have repeatedly demonstrated upon the cadaver that the operation is simplicity itself."
7	1893 Feb. 27	Not published.	Griffith, J. D., Kansas City.	Cholelithiasis, cholemia.	Cholecystenterostomy.	S. S.	D.	Exhaustion.	Patient had large hemorrhagic spots all over body at time of operation. Autopsy showed large extravasations throughout entire intestinal track; no peritonitis.
8	Mar. 13	" "	Griffith, J. D., Kansas City.	Cholelithiasis, impaction in duct.	Cholecystenterotomy.	S. S.	D.	Shock.	Operation greatly prolonged on account of adhesions; connection to jejunum.

GANGRENE OF THE GALL-BLADDER. (METHOD: MURPHY BUTTON.)

No.	Date.	Publication.	Operator.	Diagnosis.	Operation.	Position	Result.	Cause of death.	Remarks.
1	1894 Mar. 15	Not published.	Long, J., Richmond, Va.	Gangrene of gall-bladder.	Resection of gangrenous portion; cholecystenterostomy.	S. S.	D.	Sepsis 24 hours.	Gall-bladder extensively gangrenous; contained 196 calculi; death in 24 hours; temperature reached 106°; sepsis.

GASTROENTEROSTOMY. (METHOD: MURPHY BUTTON.)

No.	Date.	Publication.	Operator.	Diagnosis.	Operation.	Position	Result.	Cause of death.	Remarks.
10	1893 July 21	Not published.	Middleton, W. D. Davenport.	Stricture of pylorus.	Gastroenterostomy.	L.	R.	…………	Uneventful recovery. Patient up to date has gained 42 lbs.
11	Dec.	" "	Reed, Chas. A. L. Cincinnati.	Carcinoma of pylorus.	Gastroenterostomy.	L.	R.	…………	Button passed 19th day. Patient died four months later.
12	1894 April 19	" "	Bresler, Baltimore.	Obstruction of pylorus.	Gastroenterostomy.	L.	R.	…………	Death four weeks later. Exhaustion. Button found at splenic flexure of colon; retained by band of adhesion; no obstruction.
13	April 20	Buf. Med. and Surg. Journ., July, 1894.	Mynter, H	Carcinoma of pylorus.	Gastroenterostomy.	L.	R.	…………	Vomiting ceased. Patient left hospital in three weeks.
14	May 5	Med. Week., Paris, vol. ii. No. 38.	Quenu	Epithelioma of stomach.	Gastrojejunostomy.	L.	R.	…………	Time of operation 1 hour 55 minutes. Uneventful recovery. Up in 18 days. Great increase in weight.
15	May	Buf. Med. and Surg. Journ., July, 1894.	Mynter, H.	Carcinoma of pylorus.	Gastroenterostomy.	L.	D.	Exhaustion, 12 hours.	Smallest-sized button used, which could not possibly grasp tissue, and was never intended for that purpose. The wall of stomach slipped out of its embrace and allowed contents to escape. A running suture is not necessary if proper-sized button is used.
16	………	Buf. Med. and Surg. Journ., July, 1894.	Mynter, H.	Carcinoma of pylorus.	Gastroenterostomy.	L.	D.	…………	
17	July	Not published.	Middleton, W. D.	Carcinoma of pylorus.	Gastroenterostomy.	L.	D.	Death 3d day.	Exhaustion. Largest button used. Patient very weak and emaciated previous to operation from constant vomiting. Post-mortem revealed circumscribed peritonitis about the site of operation. Approximation perfect. Stomach eroded by a great ulcer 8 inches in diameter. Pancreas and other organs involved.
18	July 6	" "	Meyer, Willy.	Malignant stricture of pylorus.	Gastroenterostomy.	L.	R.	…………	Rapid recovery. Discharged August 25, 1894.
19	July 4	" "	Mayo, W. J., Rochester.	Carcinoma of pylorus.	Gastroenterostomy.	L.	R.	…………	Death 14 days afterward; broncho-pneumonia. Autopsy: perfect union; button liberated; opening twice as large as button.
20	July 23	" "	Meyer, Willy	Carcinoma of pylorus.	Gastroenterostomy.	L.	R.	…………	Patient still in hospital doing well, September 6, 1894.
21	Sept. 13	" "	Lyman, C. B., Denver.	Carcinoma of pylorus.	Gastroenterostomy.	L.	D.	Exhaustion 4th day.	Autopsy: very large carcinoma involving large portion of stomach and duodenum. No peritonitis; perfect approximation; button in position.
22	Sept. 30	" "	Bryant, E. A., Los Angeles	Carcinoma of pylorus.	Gastroenterostomy.	L.	R.	…………	Button No. 3 (1 inch in diameter) used, which was voided on 16th day. No pain, fever, or vomiting after operation.
23	Sept. 26	Med. Week., Paris, Oct. 13, 1894.	Jaboulay.	Carcinoma of pylorus.	Gastroenterostomy.	L.	R.	…………	Button No. 3 used, which passed on 14th day. Patient made an excellent recovery.
24	Aug. 23	Cal. Med. Journ., Nov. 18, 1894.	Case, C. E., Tacoma.	Carcinoma of pylorus.	Gastrojejunostomy.	L.	D.	Peritonitis, 7 days.	Autopsy: perfect union at seat of approximation; button still in position; general suppurative peritonitis.
25	1893 Oct. 12	Not published.	Griffith, J. D., Kansas City.	Carcinoma of pylorus and duodenum.	Gastrojejunostomy.	L.	R.	…………	Died two weeks later of exhaustion. Patient 72 years old, and very much emaciated.
26	Nov. 10	" "	Griffith, J. D., Kansas City.	Carcinoma of duodenum and liver.	Gastrojejunostomy.	L.	D.	Septic peritonitis.	Button not pressed tightly enough, one edge loose; patient 60 years.
27	1894	Paris Week, Jan. 4, 1895.	Monod, Paris.	Carcinoma of pylorus.	Gastroenterostomy.	L.	R.	…………	Button voided on 12th day. Doyen's procedure approximating intestine to posterior wall of stomach through perforation in transverse mesocolon.

15. The mucous membrane should be pushed down in the cup of the button before closing it; if redundant, it should be trimmed off with the scissors. *It should never be allowed to protrude between the edges of the button when the button is closed.*

16. While the button is easily inserted, the pathologic condition requiring the operation may demand the greatest surgical skill to secure a favorable result.

17. The following points regarding the construction of the button should be noted before using it:

(*a*) The spring catches should hold firmly in all positions and should be made of a metal that will not be corroded by acids.

(*b*) The elastic-pressure cup should be on the male half of the button (never on the female).

(*c*) The edges of the pressure-surfaces should be very smooth and hemispherical in shape.

(*d*) The spring under the pressure-cup should not be too strong.

(*e*) There have been defective buttons on the market. The following firms are at present manufacturing perfect buttons: J. J. Ryan & Co., Chicago; Truax, Greene & Co., Chicago; Geo. Tiemann & Co., New York; W. F. Ford & Co., New York; Down Brothers, London, England; Sharp & Smith & Co., Chicago; Frantz, Kratzmüller & Co., Chicago and Berlin.

18. If the button appears at the opening of the fistula after lateral approximation, do not try to force it through the opening; this is unsurgical. Open the abdomen, and (*a*) press it back to the anastomotic opening and through it on down the intestine, and it will pass; or (*b*) make a longitudinal incision in the bowel and take it out.

PHYSIO-MEDICALISM.

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PHYSIO-MEDICALISM, also called sanative medicine, is a descendant of Thomsonian or botanic medicine, and arose in Ohio about 1845, having continued to the present time as a weak and rather obscure medical sect, the only surviving form of Thomsonism in America.

Alva Curtis, who formulated and developed physio-medicalism from the Thomsonian system, was born in New Hampshire in 1797. He obtained a good general education (receiving late in life the degree of A.M.), and studied medicine for a time under a preceptor. Up to 1832 his main occupation was teaching; but after the cholera-epidemic of that year he engaged exclusively in practising and disseminating the Thomsonian medical system. About 1837 he became editor of a Thomsonian journal, and gave instruction in the system at Columbus, Ohio. In 1839, under a State charter, he established the Botanico-medical College of Ohio, which in 1841 was transferred to Cincinnati. He continued editor of the journal until 1855, and taught in the college until 1875. During that time he wrote numerous works in presentation and support of physio-medicalism, some in a style of tedious pseudo-philosophic analysis, some of a controversial character. He died in Cincinnati in 1881.

The Physio-medical College of Cincinnati, founded by Curtis, in 1839, as the Botanico-medical College, and under his management for many years, was the leading influence in the promulgation and maintenance of the system. The name physio-medical, which was introduced by Curtis about 1842, was applied to it from about 1849. The institution continued in existence until 1880. Other physio-medical schools have existed, at Cincinnati, from 1859 to 1885; at Marion, Indiana, from 1881 to 1890; at Indianapolis, since 1873; and at Chicago, since 1885.

The leading physio-medical periodical, the *Recorder*, was established in 1832 as an exponent of Thomsonism, and was one of the first journals devoted to that system. It was entitled the *Thomsonian Recorder* up to 1837, the *Botanico-medical Recorder* from that date until 1852, the *Physio-medical Recorder* after that until, consolidating with another journal, it appeared as the *Cincinnati Medical Gazette and Recorder* from 1880 to about 1885, when it became extinct. The successive changes in name correspond to changes in Thomsonian thought.

W. H. Cook, another leading exponent of the system, succeeded Curtis as editor of the journal in 1855. Besides this, the sect has had one or two journals which were short-lived, and the two existing periodicals, published at Indianapolis, Indiana, and Westerville, Ohio, since 1875 and 1891 respectively. Besides its journals, the literature of physio-medicalism consists mainly of the writings of Curtis and a few works by Cook and recent authors. Illiteracy, shallowness, and narrowness are a pervading feature of its periodical literature and modes of thought.

Physio-medicalism at the present time has its greatest strength in Ohio, Indiana, Illinois, and Iowa, with some following in the States adjoining them, and in Texas, Oregon, and Washington; between two-thousand and three-thousand practitioners are claimed for it in all, but this is probably an excessive estimate. There is a national association of its practitioners, organized in 1883, which has about 150 members; State organizations exist, in a condition of more or less vitality, in Indiana (organized in 1863—the oldest existing physio-medical society), Ohio, Illinois, Iowa, Michigan, and Washington.

The sect now has two journals and two colleges; the number of graduates from 1881 to 1890 averaged 21.6 annually, but since then the number appears to have diminished more than one-half.

The characteristic fundamental doctrines and claims of physio-medicalism are as follows:

Professing to reject speculation and human assertion and authority and to be free from human error, physio-medicalism claims to be based solely upon and guided solely by the "immutable" teachings and laws of nature, wherefore it considers itself infallible. This idea is represented in the name physio-medicalism, which is taken to mean "natural medicine," that is, medicine taught by and following Nature.

Disease is viewed as a disturbance of the normal action of the vital principle. All diseases are looked upon as essentially the same in their general nature—an inability of organs to perform their natural functions properly, owing to the derangement of the vital action. The vital power, or nature, is a potent curative agent, and powerfully resists disease and promotes recovery. Physio-medicalism (as the name partly signifies) professes that its fundamental therapeutic principles are to aid and follow Nature.

The pathologic notion upon which physio-medicalism lays the greatest stress is that fever, inflammation, irritation, etc., are not diseases or injurious to the organism, but that they are manifestations of vital efforts to cure disease, and should be aided, never opposed, by medication. The great error of regular medicine, from the physio-medical standpoint, is the idea that fever is destructive and injurious, not recuperative, and the antipyretic treatment based on that idea.

All drugs are considered to be divided into two distinct and sharply-defined classes—those that oppose and those that aid the vital force and vital processes. The former are the poisons, which destroy the tissues and, in sufficient quantities, life itself; they are always injurious, and should never be used in the treatment of disease; since they cause disease, it is absurd to suppose that they can ever cure it. The drugs of the second class are gentle, innocuous, and always beneficial, never injurious; their action is always to tend toward and vanish in health; they are the only true remedies for disease, and they alone should be used in treatment. These are called "sanative" medicines, a designation often applied as a name for the whole system. The injuriousness or harmlessness of a substance is an essential, unvarying characteristic; a poison, for instance, is always a poison, injurious under all circumstances and in every dose. Physio-medicalism expresses firm opposition to the use of powerful agencies like bleeding, mercury, opium, and similar active means.

Although only innocent medicines may be used, there is no restriction to vegetable substances. While the physio-medical materia medica comprises many articles, the principal remedies are lobelia, capsicum, and the vapor-bath. "Courses" of medicine are also prescribed, by which, it is claimed, "any sensible man or woman" can cure nine-tenths of all diseases. Superior results are of course claimed by physio-medicalism from the treatment of disease on these principles.

The correspondence of these methods and doctrines with those of Thomsonism is marked. Physio-medicalism is a descendant, somewhat refined and modified, of Thomsonism, with some of its notions adapted or dropped, and a few principles that had only a minor place in the earlier system worked out to greater prominence. Physio-medicals, while considering that the Thomsonian system contained some crudities, errors, and even absurdities, of minor importance however, regard the system as of general excellence, and honor Thomson as the discoverer of (alleged) true and revolutionary medical principles.

In estimating the merits of physio-medicalism, a system originally derived from the teachings of Samuel Thomson, the latter's utter lack of education and experience and the commercial character of his operations should be borne in mind.

The claim of being so founded upon the teaching of nature as to be infallible and free from human error is idle. The same claim is put forth for all dogma, and the same object is aimed at by true science and philosophy as well. All the facts and laws of nature have to be laboriously searched out by human observation and interpreted by human intelligence; all investigations of truth are subject to the same fallible human element. It is therefore pure assumption for the physio-medicals to claim to know the operations of nature beyond the possibility of error or to have a method of pursuing knowledge superior to all others.

The position of physio-medicalism upon the pathology and treatment of fever, its chief point of antagonism with regular medicine, does not stand the test of facts as a universal truth. In some cases of fever and inflammation, it is true, diaphoretic and relaxing treatment is proper and effective. But it is equally true that in other cases vigorous antipyretic treatment by drugs, and especially by cold baths, is capable of producing marvellously beneficial results. This is so well established as to be beyond denial. The indiscriminate rejection of antipyretic treatment, according to the fixed blind dogma of the physio-medicals (however applicable it may be in a few cases), is manifestly wrong and contrary to the interests of the patient.

The doctrine that poisonous drugs are always injurious and curative drugs always innocuous cannot be true. There are many drugs, like quinin, strychnin, arsenic, and alcohol, that are markedly curative and beneficial in proper doses, but are violent poisons in larger quantities. It is, in fact, their powerful properties that render such drugs effective and make many of them among the most valuable of remedial agents.

Aside from this principle as a theoretic abstraction, the practice of using gentle and agreeable medicines is highly commendable and important. Physio-medicalism has no monopoly of such treatment; the prevailing use of lobelia in its practice is, in fact, far from being of such safe and gentle character as is desirable.

There is great inconsistency between the teachings of physio-medicalism concerning poisons and its use of lobelia. The adherents of the system deny that lobelia is, under any circumstances, poisonous; they are indignant that the drug is asserted to be injurious and because dealers sell it labelled "poison"; and they laboriously attempt to explain away the damaging facts and fatal cases against it. They cite, as an argument for the harmlessness of lobelia, instances in which large doses have been taken without injurious results, which is equal to claiming that it is perfectly safe to fall from the top of a high building because cases have occurred in which persons have not been injured by such falls. All their claims cannot diminish the fact that lobelia is a harsh, depressing drug and a powerful poison. Numerous fatal cases of poisoning by it are on record; the Thomsonian medical systems are responsible for many deaths occasioned by its use, and botanic practitioners have been repeatedly tried and convicted for fatal results so caused.

The system is bred and sustained by extravagant enthusiasm and exaggeration of the importance of one or two minor ideas, with consequent disregard and rejection of other elements which are also included in the aggregate of truth; such factors flourish most in narrow and ignorant minds. The verdict of the world upon Thomsonism has been passed and the sentence of extinction has been executed. Its offspring, physio-medicalism, languishes, weak and obscure; and it is doomed eventually to be swept away as a stain that smirches a small corner of the edifice of truth.

THE SALOL-TEST FOR GASTRIC ATONY.

By A. L. BENEDICT, A.M., M.D.,
LECTURER ON DIGESTIVE DISEASES, UNIVERSITY OF BUFFALO, DENTAL DEPARTMENT.

There are a number of organic chemicals that are insoluble in an acid medium and that break up into two components in the presence of an alkali. Salol, a union of salicylic and carbolic acids, is the best known of these, and it has been employed to mark the time of the passage of the stomach-contents into the intestine. A powder of salol is given at the end of a meal, the urine is saved at, say, fifteen-minute intervals and tested for salicylic acid by pouring a few drops of liquor ferri chloridi into the test-tube. The formation of ferric salicylate is indicated by a dark, permanganate color. A gram is usually given, but as a few deaths have occurred from this or a slightly larger dose, it is better to give half a gram. The test should be found in from forty-five to sixty minutes after the ingestion of salol.

It is plain that the salol-test cannot indicate the real emptying of the stomach, but only the preliminary leakage through the pylorus. Again, the time set as an average includes the decomposition of salol, the absorption of its components, their passage through the portal (or possibly the lymphatic), pulmonary, and systemic vessels to the kidneys, and their elimination and passage through the entire urinary tract. Judging by the potassium-iodid test for gastric absorption, about ten minutes must be subtracted for these various delays. It must also be considered that the change in reaction is not an instantaneous one. In animals the reaction of about the first eighteen inches of the intestines is acid. However, if it could be established that in spite of these *à priori* objections the normal time of the appearance of the salicylic test were considerably increased and diminished by atony and irritability, respectively, of the gastric muscles, the test would still be of practical value. Relying on the reputation of the advocates of the test, I have used it for some time, until the surprising monotony of the results led to neglect and finally to a more careful recording of notes to learn if my growing skepticism was justified. It is regretted that earlier and much more numerous memoranda were not saved. Still, they would only have added force to the present list.

In this series of nineteen observations the average time for the appearance of a marked reaction (without extracting with ether) was fifty-five minutes, the minimum thirty, and the maximum ninety. These extremes were reached in two persons each. All four were afflicted with sub-acid or non-acid dyspepsia, shown by chemic examination, except in one minimum case, a feeble old woman who had chronic bronchitis. Of course, the chemic examinations were not made after the same meal as the salol-test, so that absolute conclusions are out of the question. It is also probable that the maximum is in excess of the true time, for the seventy-five-minute urine was not saved, and in one case there was already a slight reaction at the end of one hour. With observations fifteen minutes apart, and the extreme limits only an hour apart, the word *average* loses much of its significance. It would be better to say that the three-quarter-hour and the one-hour samples were those in which salicylic acid was usually found (fourteen times in nineteen examinations); that a slight or even a marked test might be found in the half-hour sample; and that the hour-and-a quarter sample should always show the reaction.

A control-experiment made in a healthy man is of the highest interest. I argued that if the salol-test was of any value in showing the time of the emptying of the stomach, it would appear more quickly if given when the escape of chyme through the pylorus had already begun. Fifteen centigrams of salol were given an hour-and-a-half after a meal, and the urine saved every ten minutes. At twenty minutes there was the merest darkening of the urine on adding ferric chlorid. At thirty minutes there was a trace of salicylic acid; at forty minutes a good reaction. Thus, with the stomach presumably already emptying itself, the elimination occurred only fifteen minutes earlier than the average of the series, and not so early as in several instances when it was given immediately after the meal. The period of elimination in this case occupied about thirty-six hours.

The decomposition of salol was, by Ewald, attributed to the pancreatic secretion, but Gley, by removing the pancreas from two dogs, showed that the decomposition still occurred. Stein's experiments have shown that mucus accelerates the absorption of salol, and that it may be absorbed from the stomach. Case XII illustrates this point, for the patient swallowed considerable mucus if, indeed, there was not true gastric catarrh. Cornet states that an hour-and-a-half is required for the appearance of salicylic acid in the urine, which is certainly not true clinically. He also states that salicylic acid may be found in the stomach two or three hours after large doses of salol. His experiments, however, were made on healthy animals, and the present series of cases seems to indicate that in sub-acid dyspepsia salol is decomposed much more rapidly in the stomach, unless we assume that persons with secretory failure have an excess of muscular activity on the part of the stomach. Case III, with a moderate amount of hydrochloric acidity, had a very slow digestion, food remaining in the stomach six or seven hours after a medium-sized meal, but the salol-test occurred an hour after eating.

Cornet states that after fifty centigrams of salol, elimination requires at least twenty-four hours. Huber considers it a sign of atony if more than twenty-four hours is required. In Case VII, in which a faint reaction was seen in the one-hour sample, and good tests in these one-and-a half and two hours after the meal, salicylic acid was absent in the three-hour sample. Unfortunately later tests were not made. Cases XII and XVI, in which, according to the ordinary test, gastric motility was good (salicylic acid being found half an hour after the meal), showed the reverse condition according to Huber's method, since elimination required, respectively, thirty-six and forty eight hours. Judging from the clinical appearances, Case XII was much the more atonic of the two; in fact Case XVI recovered very rapidly. It would seem that the duration of elimination would depend largely on circulatory, and especially upon renal conditions, so that Huber's test would not be decisive as to gastric atony.

It will be observed that while this series, in a general way, seems to show that achlorhydria may allow the quite rapid absorption of salol from the stomach, there are enough discrepancies to vitiate any possible value that the test might have in this direction. In fact, the conclusion seems justified that the appearance of salicylic acid after the administration of salol merely means that the latter has been absorbed somewhere, and that no practical deduction can be drawn, unless possibly from the occurrence of a very marked delay, but this delay does not often occur in the very cases in which we should most expect it.

Cases.

		Hours.	Hours.	Hours.
I.	*Hepatic cirrhosis, gastric catarrh*	½	¾	3
II.	Hepatic cirrhosis, stomach nearly normal	..	1	1½
III.	Incipient pulmonary tuberculosis(?), *subacidity, fermentation acids, slow digestion*	...	1	
IV.	*Incipient pulmonary tuberculosis*, subacidity, and atonicity	¾	1	1½
V.	Subacidity with *eructations*	...	1	3
VI.	*Slight dilatation, eructations*	½	¾	
VII.	*Subacidity** and atonicity (Jan. 13)	...	1½	2
	No salicylic test 3 hrs. p.c. (Apr. 1)	...	1	2
VIII.	Subacidity	¾	1	
IX.	*Subacidity*	½	35 min	
X.	*Subacidity**	½	¾	2
XI.	*Subacidity**	...	1½	3
XII.	*Chronic bronchitis*, gastric catarrh(?)	...	½	1¼
XIII.	Atonic dyspepsia (subacid)	...	1	1½
XIV.	*Subacidity** (Oct. 30)	½	¾	3
	Marked *butyric acid* (Oct. 31)	...	1	3
	Fermentation (Nov. 13)	...	¾	
XV.	*Subacidity**	½	¾	
XVI.	*Subacidity**	...	½	

Note.—Diagnoses in *italics* were verified by physical and chemic examination. Cases of subacidity, marked with a star, showed absolute lack of hydrochloric acid.

The first column, marked "hours," refers to the finding of slight traces of salicylic acid after extracting the urine with ether. The second column indicates the time at which a marked reaction was first found. The third column refers to the time at which the qualitative reaction appeared most marked in the urine saved at intervals up to three hours.

CLINICAL LECTURE.

TUMOR AT THE BASE OF THE BRAIN.[1]

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This young woman presents a number of symptoms that will enable us to make an unerring diagnosis of a disease that, on account of its gravity, I am glad to say, is comparatively rare. She tells us that she was born in this country, is twenty-three years old, unmarried, and that her family has been exceptionally healthy. In childhood she had scarlet fever, diphtheria, and several of the milder infantile disorders that left her without sequelæ; her health since childhood until about a year ago was good. Last January or thereabouts she began to have headache, a trouble previously unknown to her, except occasionally as an accompaniment of menstruation. It persisted, became more grave until the slightest pressure on the head caused the greatest distress. You will notice from her expression that the finger barely touching her forehead induces a jar that is extremely painful. After the headache had lasted for two months or more it was aggravated by persistent vomiting. The vomiting was unaccompanied by nausea, was without abdominal pain, and no alterations in the diet relieved it. For over nine days she vomited almost incessantly. About this time, about the first of April, she became suddenly paralyzed, and for two days was unable to speak. We have not the benefit of the results of an examination at this time, and cannot determine the actual extent of the paralysis. Her statements seem to limit the paralysis to the face. When I ask her to go through the various facial movements, such as smiling, raising the eyebrows, attempting to whistle, you see that there is no apparent paralysis present. But the use of this pin-point shows that the sensibility of the left side of the face is decidedly impaired, and the finger can be brought in contact with the outer canthus of the left eye and with the conjunctiva without producing the marked reflex movements that it does on the right side. Even the left nostril seems to be less susceptible to sensory impulse when she inhales this strong vinegar or ether. Pursuing the investigation further, see how different is the appearance of the mucous membrane of the mouth on the two sides. Note the sponginess of the gum on the left side and the accumulation of food between the cheek and the teeth, of which she seems to be unaware. Compare with this the right side, where the mucous membrane is wholesome, paler, and much more cleanly. She tells us also that she does not chew with the left side of her jaw, and as I invite her to bite upon a lead-pencil, you can see that there is a partial paralysis of the muscles of mastication on the left side. There is loss of sensation as well as of taste upon the left side of the tongue, and paralysis of the left hypoglossal nerve, as shown by protrusion of the tongue to the left. As I look closely at her eye I see that there are one or two hairs and some particles of dust on the conjunctiva, to which she seems indifferent. The mucous membrane is engorged and in a state not unlike that of the mouth and nose. This condition of the eye followed her sudden paralysis in April. When I ask her what the next occurrence was, she tells me that her eyes began to weaken and that vision failed, so that for four or five weeks she has been totally blind in both eyes. As you see, when I shade her eyes and then suddenly expose them to light, there is no pupillary reflex. There is a general paresis of the left eye, so that, asking her to follow the snapping of my finger with her eyes, the right eye moves much more freely than the left. Personally I have not examined the fundus of the eye, but a report from Dr. Lucien Howe states that she has extreme atrophy of both optic nerves, with retinitis in the left eye.

There is but one other point in the general appearance of the patient to which I wish to call your attention, and that is the facial expression, which, except for the manifestation of pain in the frontal corrugation, is one of apathy. Her attitude when not disturbed is one of sluggish indifference. At each of my visits, and I have now seen her a number of times, she has been listless, apathetic, sitting in one position for a long time unless invited to some occupation. Her statements have not been to the same effect at all times, and the discrepancy I ascribe not to any untruthfulness but to a failure of memory. As recorded in the hospital-book, she told us, at the time of her admission, of two distinct convulsions that occurred in April. To-day she has omitted to mention them.

I believe that we have here a case of intra-cranial tumor. From the involvement of so many nerves, it must be located at the base of the brain, where, from pressure on nervous tissue, from venous obstruction, and from consequent increase in the cerebro-spinal fluid, it has produced the various symptoms present. These symptoms are divisible into two groups, the focal, which enable us to locate the seat of disturbance, and those that are due to the change in intra-cranial pressure. Neither of these groups of symptoms will aid us directly in diagnosticating the kind of tumor.

The most characteristic symptom of increased intra-cranial pressure, and, therefore, of brain-tumor in general, is the constant headache coming on in a person not subject to such trouble and without other assignable cause. Any jar of the head increases the pressure momentarily, and, as you have plainly seen, aggravates the pain. This same increase of pressure produces the mental dulness, which is a very fortunate circumstance, as the suffering and realization of the condition are thus materially lessened. The same increase in intra-cranial fluid has caused prolonged pressure on the optic nerve, with resulting atrophy, as indicated by the loss of vision. Even this candle, placed close to her face in different positions, induces no retinal impression. You will note that the loss of vision is not a focal symptom, as it is general and complete. A hemianopsia would point to pressure upon one optic nerve. The vomiting, of a projectile nature, we may also believe to be purely a pressure-symptom. The epileptiform convulsions—granting that she had them—must also have been pressure-symptoms.

The left retinitis and conjunctivitis are due, not to atrophy of the second nerve, but to that of the ophthalmic branch of the fifth, in which is located the trophic control of the eye.

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[1] Clinical Lecture at Buffalo General Hospital.

The impaired sensibility of the face, tongue, and mouth, as well as the loss of taste, points to the involvement of the fifth nerve ; the motor nerve of the face, the seventh, has been involved, according to the history, but at present the paresis is limited to the tongue, supplied by the hypoglossal, and to the muscles of mastication, supplied by the inferior maxillary division of the fifth. The impairment of the sense of smell is, I believe, explained by the trophic changes in the mucous membrane, due to the involvement of the trifacial nerve. The lesion must, therefore, be at the base of the brain, on the left side, but not extending far outward, as the seventh, eighth, ninth, tenth, and eleventh nerves escape. The tumor must lie in the posterior part of the middle fossa of the skull, extending, perhaps, into the anterior part of the posterior fossa. Its exact localization is only a matter of analytic interest, inasmuch as a basal tumor cannot be operated upon, and it is only in cases in which surgical relief is possible that the anatomic location is important.

Of the several kinds of tumor that may occur in the cranium, I believe that this is most probably a sarcoma, as such growths are more liable to be basal, or it may, perhaps, be tuberculous. It has undoubtedly originated in the fibrous tissue at the base of the brain.

In the hope that the tumor might be syphilitic the patient was placed upon specific treatment, but the heroic doses of potassium iodid that she has taken have failed to afford relief. This treatment has, however, had a diagnostic value. The principal treatment now is directed toward the relief of the more troublesome symptoms. The loss of sensitiveness in the left eye, which has already allowed foreign bodies to set up a conjunctivitis, may result in the formation of an actual ulcer. Washing with rose-water and boric acid will benefit this, and the application of a patch over the eye may be necessary if her indifference to injuries threatens its destruction. Her headache has been in a measure relieved, and I should advise the continuance of the treatment by the use of salines to deplete the system, and, so far as possible, to diminish the intra-cranial pressure. There has been no vomiting since she entered the hospital; and her headache, though persistent, has been so much milder that it has not caused intense suffering. We have a right to expect nothing more than to be able to keep her in a comfortable condition.

The end of the case may come through cerebral hemorrhage, which has already once occurred, to judge from the sudden paralysis, or an aggravation of the pressure from the simple growth of the tumor may induce a retarded pulse and respiration, followed by coma and death. If the nature of the tumor be tuberculous, meningitis may result and cause death, with the ordinary symptoms of that disease.

Fatal Poisoning by Quassia.—Venn (*University Medical Magazine*, vol. vii, No. 4, p. 304) has reported the case of a child fatally poisoned by a rectal injection of a decoction of two ounces of quassia in about a pint of water, made for the relief of seat-worms. From five to ten minutes after the injection the child became livid, vomiting took place, the muscles became relaxed, and respiration labored and shallow and the pulse imperceptible. Death took place within a few minutes.

CLINICAL MEMORANDA.

ON CERTAIN MORPHOLOGIC AND MICROCHEMIC PECULIARITIES OF THE BLOOD IN DIABETES AND GLYCOSURIA.[1]

BY LUDWIG BREMER, M.D.,
OF ST. LOUIS, MO.

When we look back on the development and progress of the medical sciences during the last forty or fifty years, and consider the amount of minute and exact information which during that time anatomic investigation has furnished about the tissues of the human body, it seems strange that we are still in the dark about the anatomy, both normal and pathologic, of that tissue upon which all the others depend, the blood. Hematology is the most neglected of all the branches of medicine. Possibly this neglect has been due to the trend of medicine during the past four or five decades, which eschewed humoral pathology and, so to say, looked with contempt upon the blood.

It is only of late, say in the last fifteen years, that the interest in this most important, because health- and life-sustaining, tissue has been revived. A powerful impetus in this direction was given by the discovery of the plasmodium malariæ, which in its turn was the result of the bacteriologic tendencies of modern medicine. The methods invented for the study of bacteria were applied to that of the blood, but principally for the purpose of finding and demonstrating the pathogenic microbes coursing in the circulation. The changes that these microörganisms might produce on the cellular elements of the blood did not seem to enter into consideration on the part of the investigators.

With the discovery of the plasmodium malariæ the attention of the pathologist was once more directed to the much-neglected and almost entirely-disregarded red blood-corpuscle, in which the parasite named is found in cases of malarial fever. Ehrlich's demonstration of the various granulations of the several kinds of white blood-cells was another stepping-stone on the road to substantial progress, at least so far as the histology of the blood in the normal state is concerned.

At the present time, it may be said, the most rudimentary methods of blood-investigation still prevail, and beyond the counting of the red and white blood-corpuscles, the determining of their relative numbers, the demonstration of the specific granulations, and of the amount of hemoglobin, very little is known. The changes in the red blood-corpuscles in anemia, poikilocytosis, and microcytosis are also very incompletely known, owing principally to the fact that our knowledge of the normal histology of the red blood-corpuscle, which in the course of this article I shall for brevity's sake call erythrocyte, is extremely defective.

For a number of years I have been engaged in the study of the corpuscular elements of the blood in health and disease ; the results of these investigations, constituting, in my opinion an attempt, though possibly a feeble one, at a systematic pathologic anatomy of the blood, I shall publish at no distant day. One of the results of my work on this subject I shall now briefly describe. It is an observation which I have made on certain morphologic and microchemic properties of the blood in diabetes and glycosuria.

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[1] Read before the St. Louis Medical Society, January 19, 1895.

It is hardly necessary to state that any contribution to the knowledge of a disease like diabetes, which has been studied so much and explored so little, so far as tangible results are concerned, must be a welcome addition to the stock of our knowledge. It is also plain that even the smallest step in the direction of ascertaining the nature of so obscure a disease may become one of the stations which are constructed along the road leading to the goal of all medical study, the cure of the disease.

It is well known that the blood in the physiologic state contains a certain percentage of sugar, whose amount varies between 0.1 and 0.3 per cent., and that 0.15 is probably the average percentage in normal blood. Traces of it, as is also well known, occur in the urine of healthy persons, but are not demonstrable with the usual chemic tests, say, Fleming's and Nylander's. A positive result with these reagents excites at once suspicion of metabolic disturbance in the individual from whom the urine has been obtained. Now, the essence of my discovery lies in the fact that whenever sugar can be demonstrated by the usual methods, either by the ordinary chemic tests, or by the polariscope, or by fermentation, there is a distinct and characteristic color-reaction of the erythrocytes on the application of a microchemic test by a combination of certain anilin colors. The method which I have employed for this and other purposes is as follows:

Two aqueous solutions of eosin and methylene-blue are made, viz., from 24 to 28 drops of a 0.5 per cent. solution of eosin are added to 2 drams of a saturated solution of methylene-blue. With these proportions the neutral boundary is approximately obtained, where the reaction is neutral, neither acid (eosinophilious) nor alkaline (methylene-blue reaction). This neutral point is determined by dipping a small piece of white filtering paper into the solution. There is, when exact neutral reaction exists, scarcely any coloration of the paper slip, or at most a very faint grayish-blue tint. To one-half of this solution in a watch-glass a drop or a fraction of a drop of the 0.5 per cent. eosin-solution is added, just enough to show a decided preponderance of the eosin stain, recognizable by the red color of the paper slip; to the other half one or more drops of the saturated methylene-blue solution are added, enough to stain a paper slip distinctly blue. A drawback in the use of these solutions is the precipitation of crystals which form a scum on the surface of the solution. This scum is easily removed by slightly passing the smoothly cut edge of a piece of filtering paper over it. The crystals are thus moved to the periphery or cling to the filtering paper, and the surface of the solution becomes absolutely clear.

Cover-glass preparations of blood must be in readiness. These preparations are made after the Koch-Ehrlich method. A drop of blood is spread on a cover-glass in the usual manner, forming a very thin layer, so that the individual blood-corpuscles are separated from each other.[1] The cover-glass preparations are heated for about two hours at a temperature of from 120° to 125° C., preferably in a copper heating apparatus. After this the preparation is floated for about three minutes on the solution containing eosin in excess; next it is similarly treated with the solution having the excess of methylene-blue. Having been dried the preparation is imbedded in damar or balsam in the usual manner. Specimens thus treated show the following peculiarities in normal blood:

All the erythrocytes assume a reddish-brown (maroon) tint, which is more or less sharply divided from the colorless central area (depression).

The intensity of the stain varies in different specimens derived from different individuals, between a light reddish-brown and a deep chestnut-brown, almost a black-brown. Different states of the blood show different color-reactions of the erythrocytes. The variation in the same individual on different days is sometimes very striking. Still more striking is the difference in the color of the blood of different individuals.

The blood-platelets (Bizzozero's corpuscles), too, are plainly stained by this method. In another publication (*Centralblatt für die medicinischer Wissenschaften*, 1894, No. 20), I have shown these, the so-called third corpuscular elements of the blood, to be nothing else than the products of physiologic decay of the erythrocytes. Often they can be seen in the act of expulsion from the erythrocyte, only parts of them protruding. Their color varies between a decided rich, deep blue and a violet. They are always more or less basophilous, showing affinity for the methylene-blue

The nuclei of the leukocytes are stained pure blue; the intra-nuclear network shows often very plainly. All epsilon-granulations (Ehrlich's) present themselves in a violet stain. The granulations of the alpha-cells are of a bright-red color. Slightly basophilous (methylenophilous) are the nuclei of the medium-sized lymphocytes, the protoplasm of which is generally stained blue, and contains basophilous (blue) granulations. Finally, the smallest lymphocytes have intensely blue nuclei and only a slightly blue protoplasmic margin.

The great advantage of this method consists in this, that the blood-plasma, too, assumes distinct and definite hues, according to its chemic constitution. Generally its reaction is slightly neutrophilous; often, however, it is of a deep reddish-brown stain, due, no doubt, to the exudation of the hemoglobin from the erythrocytes. This exudation or effusion is the result of the drying and shrinking of the protoplasm of the red blood-corpuscle or diskoplasma.

Among the many changes alluded to, about the nature of which I am still in the dark, that observed in diabetes is most characteristic and striking. It consists in the complete loss of the eosinophilia of the erythrocytes. This loss is demonstrable in the blood of all persons in whose urine sugar can be shown to occur by the ordinary clinical tests.

In all instances that have come under my observation so far, comprising cases of typical diabetes, as well as glycosuria of a more or less transitory character, the staining peculiarity just mentioned could be shown to exist. So exact and certain is this reaction that on various occasions, in fact, in a majority of the cases examined, I was enabled to predict sugar in the urine, even in persons in whom not the slightest suspicion of glycosuria existed.

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[1] A far superior method of spreading blood for the purposes of histologic and pathologic study I shall publish shortly in another place.

In such preparations the erythrocytes either remain entirely unstained, or they are of a slightly yellow or greenish-yellow tinge. Rarely there is a narrow peripheral zone of the erythrocyte stained red (eosinophilous). The plasma, too, remains colorless, or is at most slightly rose-colored, a proof that it is not the loss by effusion of the hemoglobin that causes the lack of coloration of the erythrocytes, but that a chemic change has taken place in the diskoplasm.

Together with this anomaly of color-reaction in the erythrocytes there are certain changes in the granulations of the lymphocytes and in the products of disintegration of the erythrocytes, *i. e.*, the blood-platelets. A description of these changes (in the platelets) I shall reserve for another publication.

Again, in all of the cases of diabetes and glycosuria examined by me up to the present time another peculiarity is demonstrable quite characteristic (at any rate so far as the quantity is concerned) of diabetic and glycosuric blood. It consists in a superabundance of white and generally globular bodies of varying sizes. They seem to be of the same chemic nature and morphologic appearance as the minute unstainable granules that are found in the blood of healthy individuals, and which by some have been called elementary granules. None of the known coloring agents will stain them. As to their nature and origin, they are necrotic substances derived from decaying erythrocytes (their products of decay being the platelets), leukocytes, and lymphocytes. The amount and the individual size of the granules are so large in some specimens of diabetic blood that the plasma appears more or less coarsely granulated. They are plainly enough demonstrable by the staining method described, but the pictures obtained by the Gram method are much more striking. In some cases these necrotic masses seem to preponderate over the plasma, a fact that possibly explains, or, at all events, renders intelligible the nervous and general symptoms of diabetes and glycosuria. Another peculiarity quite characteristic of the kind of blood in question is a very clear, sharply-defined, narrow, white zone surrounding the nuclei of the white-blood corpuscle (leukocytes and lymphocytes and alpha-cells). They often describe all sorts of curves around the nuclei; a frequently recurring curve is the C form. I take these white contours to be indications of limited necrosis of the protoplasm of respective cells. Only in two out of fifteen cases were these peculiarities not demonstrable.

Whether this abundance of necrotic globules is in connection with the color-reaction described, or whether there exists another characteristic constituent of the sugar-blood causing the reaction, has to be determined by future experiments. Against the former assumption speaks the fact that the blood in certain cases of nervous cachexia is loaded with white globular masses of apparently the same nature with those just treated of, and yet the tinction of the erythrocytes is the normal one.

It is somewhat strange that the erythrocytes of sugar-blood are refractory in their elective affinity only to eosin, whilst other acid anilin dyes (scarlet, aurantia, and acid fuchsin) stain them easily.

One might be led to assume that the abnormal amount of sugar in the blood is responsible for the loss of the eosinophilous reaction of the erythrocytes. But a simple experiment refutes such an assumption. If a cover-glass preparation of normal (non-diabetic or non-glycosuric) blood be treated with a solution of grape-sugar, the color-reaction is the normal one. If, however, a cover-glass preparation smeared with non-diabetic or non-glycosuric blood, heated in the usual way, be floated for a short time, say twenty-five or thirty minutes on diabetic or glycosuric urine, and then be stained by the eosin-methylene method, the typical reaction sets in; the erythrocytes lose their eosinophilia. They appear slightly greenish-yellow. The counter-experiment, treatment with non-diabetic urine, is negative. Neither does urine, to which grape-sugar has been added, change the normal stain. I have not succeeded as yet in diagnosticating the greater or lesser amount of sugar in the urine from the various degrees of loss of eosinophilia in the erythrocytes. Nor is it possible to diagnosticate simple or transitory glycosuria from genuine diabetes by this staining method. There seems to be, however, no doubt that the loss of the eosinophilia bears a certain proportion to the percentage of the sugar. Likewise, the white granular masses are generally proportionate, both in size and amount, to the gravity of the case. They are likely to remain in cases of glycosuria, when sugar is no longer demonstrable in the urine. Such cases are, in my opinion, in danger of relapse. Finally, there are cases in which the reaction is somewhat dubious, and in which only a suspicion is raised by the appearance of the blood, *i. e.*, the stain is nearly, but not quite, the typical sugar-stain.

In glycosuria artificially produced by phloroglucin, for instance, with a daily dose of 0.6 administered during three consecutive days, the mentioned reaction of the erythrocytes could likewise be demonstrated. The presence in abundance of the white granular masses could be established.

Gabriczewski[1] has claimed that glycogen can be demonstrated in the leukocytes of diabetics. I have not been able to verify this observation.

The material of my investigations is confined at present to fifteen cases. Of these, six are genuine cases of diabetes; six are patients in whom nervous troubles, generally of a neurasthenic character, exist (one of them traumatic neurasthenia); two present nervous symptoms dependent on luetic infection; one has struma, but presents no subjective symptoms. In the great majority of these cases the presence of sugar in the urine was foretold by the behavior of the erythrocytes toward the eosin methylene-blue staining method, and the presence of the white granular masses as shown by the Gram method.

HEMORRHAGE FROM THE UMBILICAL CORD ON THE TENTH DAY.

BY A. RHETT STUART, A.M., M.D.,
OF WASHINGTON, D. C.

In The Medical News of November 17, 1894, was an article on "Umbilical Hemorrhage, not Due to Loose Ligature or from Laceration of the Cord, but Due to a Hemorrhagic Diathesis, Weakened and Diseased Vessel-walls, or an Inherited Taint of the Blood." That such cases are of rare occurrence I cannot agree. I am of the opinion that they occur frequently, but that they are often not recorded, but regarded by the attending physician as nothing very rare or remarkable. The only thing that attracts his notice, to his sorrow and disappointment, is that, notwithstanding all devices and ways and means of treatment, both surgical and medical, he fails to control the hemorrhage, and death is the inevitable result. I consider that this hemorrhage from the cord, which is always so fatal, occurs usually only in those infants that are born of scrofulous or syphilitic parents, and in whom the tainted, impure blood is inherited; the diseased and weakened vessel-walls also are inherited; in truth, all the organs of the body do not escape the impurity.

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[1] Arch. f. exp. Path., Bd. 28, p. 272.

A short time ago I was called to see a patient, a baby ten days old, apparently in good condition. On inquiring what was the matter the mother informed me that the baby's cord had been bleeding for two hours, and on lifting the outside dress I found that quite a hemorrhage had taken place, the undergarments being saturated with blood. The mother told me that the cord had fallen off five or six days before, and everything was progressing nicely until she noticed the blood, which had soaked through the clothes. I at once quickly exposed the cord to view, and noticed the blood oozing and welling up drop by drop and trickling down over the belly from the apparently non-ulcerated but healthy-looking stump of the desiccated cord. It reminded one of the water bubbling through the sand at the bottom of a spring, only the oozing and welling up from the stump of the cord were very deliberate and slow.

The infant was placed on a pillow upon a table, and Monsel's solution applied in and around the stump with apparent success, for after using it the blood ceased flowing, and after waiting fifteen minutes and seeing no signs of continued hemorrhage, I placed over the stump a large compress of absorbent cotton and a closely-applied bandage, and left.

In three hours' time I was summoned again to find a renewal of the bleeding, which must have started a few moments after I left the house, for the compress and bandage were both completely and thoroughly saturated with blood, although a large amount of cotton was used as a compress. I exposed the stump again after administering three drops of brandy in a teaspoonful of water, and found the blood oozing slowly up, drop by drop, as before. I sent out for a stick of silver nitrate, which I applied sedulously, but only with the effect of stopping the oozing for a few moments..

Tannic acid, powdered, with powdered iron subsulphate, was next used, making an inky-black paste with the liquid blood, on account of their incompatibility; but by pasting the stump up in this manner the blood ceased to flow for one hour, and I was about to leave, when on close examination one little drop of blood was seen to well up afresh. I then sent out for a solution of plaster-of-Paris, which Vogel speaks of as having been used with success, but I could not get it, either because it was so early in the morning the druggists did not wish to be disturbed, or because there was none in stock.

Having then determined to ligate the stump immediately, I sterilized two large sewing or knitting needles about three inches long, and transfixed the stump close to the abdominal wall, the needles being at right angles, and by pulling it up ligated tightly the stump both below and above the transfixing needles, in two places, with two separate pieces of thread.

After taking the needles out I applied the medicinal treatment that had acted best before, that is, the powdered mixture of tannic acid and iron subsulphate, making a mound of this mixture around the stump, using it freely and abundantly. Having waited a little while, and again seeing no evidence of continued hemorrhage, I placed on a compress and bandage, and left the house for a little rest and sleep, feeling more confident and hopeful of my treatment being successful, and thinking that by no possible means could any more blood escape. I told the parents that if they noticed any blood on the bandage to send for me, and that as a last resort I would cut down and find the bleeding points and apply ligatures directly to them; and if that failed, I could do nothing more. Not being sent for, I called the next morning at 11.30 o'clock, but little hopeful of successful news, and therefore was not surprised to find that the baby had died at 7 A.M., though no blood had appeared on the outside of the bandage. Wishing to see if there had been much hemorrhage following the strong double ligatures of the stump, I exposed it and found that there had been considerable oozing on all the compresses except the top layer. I would say here that the compress was not so thick or abundant as before, for I considered that the baby had but little more blood to lose without death as a result, and I wished the slightest oozing to be seen by soaking through the slight amount of cotton. The infant, of course, died from asthenia from the loss of blood from a hemorrhage that I could not control.

I doubt if cutting down surgically and finding and ligating the bleeding-points would have succeeded, for the little ones will bleed to death from the freshly-made incisions, and the vessels are not to be found to ligate, the blood oozing in every direction from the smallest capillaries between the layers of the skin and from the tissues. These children some would certainly claim to be, of course, born of hemophilic parents. But I repeat that these hemorrhages from the cord are very liable to occur in infants born of scrofulous or syphilitic parents, and resist just as obstinately the attempts to control and the ways and means of treatment, both surgical and medical, as a child born of hemophilic parents, thus inheriting a hemorrhagic diathesis.

A remarkable feature of this case was the location of the collateral hemorrhage, in the eyes, from the conjunctival mucous membrane, when the bleeding seemed to be controlled for a time at the umbilicus.

The mother of this child was markedly scrofulous, and no doubt syphilitic. Indeed, five days after the baby's death I was called to see the mother, who lay in collapse with bloodless white tongue and mucous membranes, caused by the loss of blood from a profuse hemorrhage of the uterus on the fifteenth day after labor. This hemorrhage was controlled with difficulty by 20-minim doses of an active preparation of ergot by the mouth every two hours for twenty-four hours and thereafter for a few days, gradually reducing the amount of dosage until 3 minims every two hours were given during the day for several days. The uterus was immediately packed, as well as the vagina, with iodoform-gauze in the usual manner, the packing remaining in place twenty-four hours, and on removal, after a cleansing antiseptic douche of the uterus and vagina, the yellowish lochial discharge made its appearance naturally and without odor.

The woman was brought out of the collapsed state she was found in by persistent stimulation from the beginning, using heat externally, and whisky, digitalis, and strychnin internally—coffee and liquids being used in large amounts on regaining consciousness, to increase the volume of the blood in the almost emptied vessels.

7 DUPONT CIRCLE.

A CASE OF ECLAMPSIA, WITH THE EXHIBITION OF VERATRUM VIRIDE.

BY A. M. DAVIS, M.D.,
OF GERMANTOWN, PA.

L. M., twenty-five years of age, a primipara, with a negative family history, had previously always enjoyed good health. When first seen the patient gave a history of having been pregnant six-and-one-half months. Physical examination revealed an individual of good physique, but poorly nourished, the mucous membrane of the lips and conjunctivæ being markedly anemic and the general complexion sallow. The heart-sounds were apparently normal, the first sound being perhaps slightly accentuated. The abdominal parietes were moderately distended, palpation revealing an L. O. A. position, with the fetal heart-sounds heard distinctly below and to the left of the umbilicus. The lower extremities were moderately edematous, this symptom having appeared for the first time one month previously. Examination of the urine showed it to be acid in reaction, with a specific gravity of 1010, and to contain about 30 per cent. of albumin by bulk, with a few hyaline and pale granular casts, the quantity secreted in twenty-four hours being slightly below normal. About this time colliquative diarrhea developed, which failed to respond to ordinary remedies.

The patient was made to rest in bed during part of the day, being restricted to a skim-milk diet and given the solution of iron and ammonium acetate (Basham's mixture), which had the effect of increasing the quantity of urine to three quarts or more during twenty-four hours. Urinalysis revealed a relatively less quantity of albumin. Notwithstanding this apparent improvement in the urinary symptoms the edema extended over the entire surface of the body (the stethoscope when used to auscultate the precordia leaving a pressure ring), and black spots before the eyes, with failing vision, began to appear, so that one week after the physician's attention had been first directed to the case the induction of premature labor was gravely considered. At this time, without apparent cause, signs of beginning labor began to manifest themselves, and twenty-four hours later delivery took place, labor being entirely normal, and the product of conception, apparently healthy, weighing 3½ pounds.

Within thirty-six hours after the birth of the child, lactation was established, the anasarca, diarrhea, and amblyopia, however, still continuing. The quantity of urine excreted varied from three to four quarts during the twenty-four hours, and the secretion still contained 30 per cent. albumin by bulk, and was of low specific gravity. The pulse became rather rapid and of high tension, although not full and bounding. The pupils were somewhat dilated and responded feebly to light. Forty-eight hours after delivery the patient, without warning, was seized with a convulsion, beginning in the muscles of the face and involving those of the trunk and upper extremities, accompanied by complete unconsciousness. The attack lasted about three minutes, at the end of which time consciousness was partly recovered, the patient being in a semi-stuporous condition and unable, to a certain extent, to control the movements of the facial muscles. During the attack, inhalations of chloroform were promptly administered (which lessened the intensity of the spasm), and an enema of croton-oil (three minims) in glycerin was given, and proved effective. This was followed by one of chloral hydrate and potassium bromid, the latter enema being repeated in three hours. Diaphoresis was freely produced by alcoholic vapor obtained by wrapping saturated cloths about hot bricks.

Two other convulsive seizures followed at intervals of about an hour (both typically like those of eclampsia) the last occurring with greater severity and extending over a longer period of time than the two previous ones. The patient recovered consciousness slowly, the temperature registering 102° F., the pulse being 136 per minute, and of high tension but of moderate volume. The heart-sounds were distinct and forcible, the muscular element of the first sound being accentuated. The pupils were widely dilated, and the skin was warm and moist. Two hours after the cessation of the eclamptic attacks, as the character of the heart-sounds, the frequency of the pulse, and the increased blood-pressure had not changed perceptibly, five minims of the fluid extract of veratrum viride were given hypodermically under antiseptic precautions. As no apparent effect was produced by this administration, in one-half hour another injection containing the same quantity of the drug was given, which had the effect of reducing the pulse-rate from 136 to 108 beats per minute, and of causing a decided diminution in the degree of arterial tension.

Three hours after the occurrence of the final convulsive seizure the patient began to exhibit marked restlessness, which was controlled perfectly by morphin sulphate (gr. ¼) and atropin sulphate (gr. $\frac{1}{150}$), the patient falling into a quiet sleep. On account of the existence of chronic nephritis, morphin was not used primarily, nor persisted in.

In twenty-four hours from the onset of the attack the temperature had fallen to normal and the pulse-rate numbered 86 beats per minute, the bounding quality of the pulse having largely disappeared; vision was apparently normal, and the patient's mental condition much improved.

The urine excreted during the twenty-four hours following the attack measured two quarts, containing fully 30 per cent. of albumin by bulk, with hyaline and pale granular casts. The patient was restricted to a skim-milk diet and urged to drink large quantities of mineral water. Medicinally diuretics were administered, and bags containing heated salt were placed under the loins to stimulate the kidneys to increased secretion. In three days following the attack, the edema had entirely disappeared; the quantity of urine excreted measured three pints in twenty-four hours, the secretion still containing, however, about the same proportion of albumin, with the presence of casts. The milk-secretion (which was well established within thirty-six hours following delivery) rapidly lessened after the convulsions, and had almost entirely disappeared one week later. Improvement in the general symptoms was uninterrupted, the patient recovering sufficiently to leave her room five weeks after delivery. At this time the quantity of urine voided daily varied from two to three pints, and analysis revealed as follows: sediment abundant and flocculent, reaction acid, specific gravity 1013; mucus, a moderate amount; albumin, 20 per cent. by bulk; urea, a trace (0.77 per cent.). Microscopically, renal epithelium with a few pale and dark granular casts were seen.

The child, whose nails had not nearly reached the finger-tips, and on whose body lanugo was scarcely perceptible at birth, took nourishment from the bottle well, and is apparently healthy.

THE VALUE OF THE ANTITOXIN-TREATMENT ILLUSTRATED BY TWO CASES OF DIPHTHERIA.

BY L. WOLFF, M.D.,
CLINICAL PROFESSOR OF MEDICINE, WOMAN'S MEDICAL COLLEGE OF PENNSYLVANIA; PHYSICIAN TO THE GERMAN HOSPITAL, PHILADELPHIA, ETC.

ON January 12, 1895, I was called to see two of the children of A. S. They were respectively a boy of seven years and a girl of two years and eight months. They had both been previously in good health, although I had treated the boy for scarlatina some years ago. On examination I found the boy had tonsillar diphtheria, and in the girl the diphtheric deposits could be seen on both tonsils, the arches of the fauces, and the uvula.

With an improvised sterilized mop I detached some of the deposit from each of the two and inoculated two culture-tubes that had been prepared at the Bacteriological Laboratory of the German Hospital. Microscopic examination, in twenty-four hours, of the stained culture showed Klebs-Loeffler bacilli in great profusion.

The boy, who was able to do so, was ordered to gargle with a diluted solution of liquor sodæ chloratæ 1 : 60, alternately with a spray of hydrogen dioxid, every hour, together with calomel internally, 3 centigrams, every three hours. Milk and whisky were also ordered.

The girl, who could not gargle, was treated locally with the hydrogen dioxid spray alone and centigram-doses of calomel. Through the courtesy of the German Hospital authorities I was able to procure one bottle of Behring's antitoxin No. 1, which had been personally brought to this country by Mr. Charles Meyer, Imperial German Consul in this city. This was injected in one dose into the little girl, and the calomel-treatment was stopped. The same day laryngeal stenosis developed in her case, and with the aid of my friend Dr. Rosenthal intubation was performed. The visible deposits in the throat seemed to have diminished the following day, and had entirely disappeared three days subsequently. The tube was removed after forty-eight hours, and the little child made an uninterrupted recovery.

The boy's case seemed to have progressed favorably for the first two or three days, when reinfection occurred, and spreading of the deposit all over the arches and uvula was noticed. Not being able to obtain any more antitoxin at the time, the original treatment in his case was adhered to, stimulants were vigorously pushed and strychnin was added, but in spite of our efforts the child died from general toxemia on the tenth day.

I publish these cases as an illustration of the value of the antitoxin. The younger child was the more seriously affected from the start, and recovered. It might readily be inferred that the older and stronger of the two, with a milder infection, would have survived could the antitoxin have been used in his case also.[1]

MEDICAL PROGRESS.

Diphtheric Vulvitis in a Child.—GNICHTEL (*Journal of Cutaneous and Genito-urinary Diseases*, No. 147, p. 532) has reported the case of a girl, one year old, who for five days had been irritable and restless and appeared to suffer pain referred to the genital region, the symptoms being aggravated during micturition. Examination disclosed several patches of false membrane covering anteriorly the internal portion of both labia majora and nymphæ and invading the urethral orifice. The membrane was firmly attached and grayish-white in color. It was further learned that two fatal cases of diphtheria had recently occurred in the house in which the child resided, the last but a week before she was taken ill. There were no other symptoms. Bacteriologic examination of the membrane revealed the presence of diphtheria-bacilli. The patches disappeared upon the use of local applications, chiefly of hydrogen dioxid and mercuric chlorid, and the child made a good recovery. At no time were marked constitutional symptoms observed.

Nephrectomy for the Relief of Congenital Hydronephrosis in an Infant Two Years Old.—At a recent meeting of the Société de Chirurgie MARTIN (*Revue de Chirurgie*, 1894, No. 12, p. 1074) reported the case of a child, two years old, presenting a cystic tumor occupying almost the entire abdominal cavity, and having progressively developed from the time of birth. Puncture gave exit to twenty ounces of fluid having the odor of urine, and was followed by paroxysms of intense abdominal pain attended with vomiting. Subsequently, lumbar nephrectomy was successfully performed. Examination showed that the morbid condition was due to congenital narrowing of the ureteral orifice.

Pseudo hypertrophic Paralysis in an Old Person.—DESTARAC (*La Médecine Moderne*, 1894, No. 89, p. 1387) has reported a case of pseudo-hypertrophic paralysis in a man, sixty-eight years old, without hereditary predisposition. The mode of onset, the course of the disease, and the absence of reaction of degeneration excluded the possibility of error. Without creating a senile type of the disease in contra-distinction to the congenital type, it is pointed out that pseudo-hypertrophic paralysis may occur at all ages and in its various forms in the same family.

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[1] No post-diphtheric paralysis has shown itself in the girl at the date of writing.

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SATURDAY, FEBRUARY 9, 1895.

SECRET MEDICINES AND THE TEMPERANCE-REFORM LEAGUE.

EDWARD EVERETT HALE in a magazine article thus writes of "Secret Medicines:"

"The audacity with which the so-called cures of intemperance are advertised is attracting general attention, as well it may. The matter is too important for good-natured neglect. Careful analyses have been made of medicines used in some of the much-advertised institutions, with very damaging results.

"There must be no secrets where life is concerned. The medical profession is a liberal profession, and not a trade, because it has always adopted this principle. What is paid to a physician is his *honorarium*. It is paid to him in recognition of his services to mankind, not simply as a purchase of his advice in the case in hand. Because this is so—because, indeed, life is something which cannot be balanced against dollars and cents—no physician who cares for his reputation keeps secret a method which he believes is useful to mankind. He makes it public, as PAUL made public the gospel when he landed on the coast of Europe. All medical associations of any character recognize this fundamental necessity. And the moment when any physician refuses to be bound by such a rule, that moment, of his own accord, he cuts himself off from a liberal profession and makes himself what is properly called a quack."

He then quotes MISS WILLARD on the gold-cures and on that meaner class of hypocrites who gain credit among reputable physicians by falsely pretending that they have a "Sanitarium for Nervous Diseases," or institutes in which "*no secret remedies are used.*" A fraud of this species was discovered by the Temperance-Reform League in Boston lately, who evades making public his gospel, and who stands high among the Prohibitionists. Says MISS WILLARD:

"White Ribboners do not believe that he has this right, or that the men who establish 'cures' throughout the country, and coin money out of them, have the moral right to do so. We believe that the English view is the true one: that any physician who has made a discovery, or who claims to have made one, which will alleviate the suffering of humanity, wrongs his fellowman and his profession if he does not make that discovery public."

"The following passages," continues DR. HALE, "are from an interview with GEORGE F. ORMSBY, published in the Boston *Herald:* 'Physicians whose eminence in their profession is generally conceded by the people of this country have disagreed with the venders of secret medicines for inebriates. Material medicines have only to do with material bodies; inasmuch as the weak will, the bent of mind, is something peculiar to the soul—something which the soul carries with it after the body becomes dust, the doings of the quack are as idle as to hope to bring salvation to a ghost by injecting hypodermic syringes into its grave. Purgatory is not thus to be escaped. Where a depravity of taste is produced and maintained by alcoholic disturbances of bodily functions, there drugs are efficacious. But drugs cannot cure a man of his memory. And his memory reminds him that rum once tasted very good. When his physical health has become perfect, when the ravages of brandy have been wholly repaired, only his memory, his habits, and his disposition to pleasure—spiritual things all of them—are his foes. How can these spiritual enemies be annihilated except through spirit conquerors!'"

MR. ORMSBY, who is attorney for the Temperance-Reform League, urgently invites any and every physician who is not using a secret remedy, and who knows of any formula that will antidote the drink-crave proper, to publish it in THE MEDICAL NEWS.

The Temperance-Reform League is an organization for the reformation of drunkards and those addicted to drug-habits, and to prevent drunkenness and intemperance by all proper, honorable, and non-secret methods. The league has employed expert chemists to analyze the secret so called cures, and finds that many of the "cures" or "tonics" of the alcoholic habit "contain from 7 to 35 per cent. of alcohol," and that 20 samples of the "opium-cures" contain morphine. MR. ORMSBY's address is 113 Devonshire Street, Boston.

MYASTHENIA GRAVIS PSEUDO-PARALYTICA.

UNDER the designation *myasthenia gravis pseudo-paralytica* JOLLY (*Berliner klinische Wochenschrift*, 1895, No. 1, p. 1) describes a peculiar condition in which fatigue of the voluntary muscles is readily induced by exercise. He reports at length one typical case and cites another previously reported, both occurring in boys about fifteen years old. A search through the literature has resulted in the discovery of but fifteen other cases that belong to the same clinical category, one of JOLLY's and ten of these terminating fatally. In some of the remainder recovery or distinct improvement ensued, while in others the outcome was not known.

In the first cases reported the symptoms were believed to be of bulbar origin, and the same conception of the pathology was adopted by subsequent observers. At most of the autopsies, however, no morbid changes in the nervous system were found, and the involvement in some cases of the extremities, as well as of the muscles supplied by the bulbar nerves, tended to show that the lesion was not always restricted to the higher nervous centers. In one case in particular degenerative changes were found throughout the entire length of the cerebrospinal nervous system, from the ocular nuclei to the sacral cord. It might be conceived that various degrees of alteration took place in different cases, from the slightest to the most profound; but there seems reason to believe that the cases thus grouped together are really of several different kinds. One is thus forced to the conclusion that while in some structural changes are present, there are others in which such changes are not demonstrable.

As intimated, the characteristic phenomenon is undue readiness of fatigue of voluntary muscles after ordinary functional activity. The function of the affected muscles is not lost, but movements at first well performed are gradually effected with greater and greater difficulty, until finally they become impossible. The disturbance is less pronounced after rest, and particularly in the morning after sleep.

The motor derangement is not restricted to any group of muscles, but often involves those supplied by the bulbar nerves, and in some instances also those of the extremities. Nutritive changes do not occur. Spinal curvature may result from involvement of the vertebral muscles. Intermissions, sometimes attended with improvement, may occur in the course of the disease, but death is likely to ensue from the dangers attendant upon the dysphagia and the interference with respiration.

The reflexes, as well as sensibility, are preserved. The muscles respond normally to faradic currents of ordinary intensity, but to tetanizing currents they behave as they do to volitional impulses—that is, the tonic contraction, at first readily induced, grows gradually feebler and feebler until it finally ceases altogether. Degenerative reactions do not appear. For this peculiar electric reaction the designation myasthenic has been proposed. It corresponds in some respects with the reaction of exhaustion.

In diagnosis the differentiation from pseudo-hypertrophic paralysis and progressive muscular atrophy may be necessary; but, as already stated, there is neither enlargement nor wasting. The condition appears to be the antithesis of THOMSEN's disease, or congenital myotonia, in which there is difficulty in movement after a period of rest, gradually subsiding with the persistence of the volitional impulse. In both conditions it is by some believed that there is an abnormal state of the muscles dependent upon changes in the ordinary metabolism. It has also been shown that similar muscular conditions can be developed temporarily by the administration of certain drugs. Thus veratrin, physostigmin, and digitoxin are capable of inducing the muscular phenomena of myotonia and protoveratrin (a body allied to veratrin) those of myasthenia.

Therapeutically the most important indication is rest, and both exercise and electric stimulation are to be sedulously avoided. Particular attention is to be directed to the general nutrition, which should be maintained at the highest level possible.

EDITORIAL COMMENTS.

The Suppression of the Nostrum Traffic.—In contrast with the efforts on the part of some members of the American Medical Association, as representative of the medical profession, to exorcise certain salutary restrictions from the Code of Ethics are the numerous indications of a disposition on the part of the dental profession to elevate its standard both ethically and educationally. While certain men in the medical profession look upon nostrums with indifference, if not with encouragement, the dentists are discussing measures for the suppression of unethical practices of all kinds.

In a paper read some time ago before the First District Dental Society of the State of New York, Dr. E. C. Kirk, of Philadelphia, showed that a large number of nostrums recommended for the relief of various painful affections of the teeth and gums contained cocain, despite the emphatic assertion to the contrary in most instances. The danger of the indiscriminate use of such preparations in unskilled hands is entirely too obvious to require extended comment, and calls for restrictive legislation of some sort. The *Dental Cosmos* in its February number notes editorially that a movement has been set on foot in Mississippi having for its object the prohibition by legislative enactment of the use of nostrums in connection with the extraction or filling of teeth. The agitation is a timely one, and should find the most cordial indorsement and support wherever intelligence and honesty prevail over ignorance and quackery. The restrictions in the use of dangerous remedies or such as are not what they are pretended to be, should, however, not be limited to any one class or variety, but should be extended to include all preparations the nature of whose composition is concealed. Dentists and physicians might well join hands in support of such salutary legislation and institute measures looking to its enactment and enforcement.

Loeffler's Toluol Solution.—Numerous inquiries have been directed both to Dr. E. J. Kuh and to THE NEWS concerning the constitution of the solution of toluol referred to in the article that appeared in THE NEWS of January 26, 1895, p. 100. It was really an omission that the formula was not given at the time, and we are glad to take this opportunity to make the deficiency good.

The solution is made by taking of menthol 10 grams (ʒijss), and adding sufficient toluol to make 36 c.c. (fʒx), and finally adding 60 c.c. (f℥ij) of alcohol and 4 c.c. (fʒj) of solution of ferric chlorid. The affected parts are first cleansed with a cotton swab held in the grasp of forceps, and then the application is made thoroughly by means of a fresh swab saturated with the solution. Precautions are to be taken by means of a face shield or other protection against infection from coughing, which is likely to occur as a result of the application. This should be practised at intervals of not less than four hours.

As Loeffler points out, this mode of treatment in nowise antagonizes or is counter-indicated by the employment of injections of the antitoxin. It has the further advantage of being serviceable in doubtful or suspicious cases and in the treatment of the various non-diphtheric anginas.

The prescription is spoken of in terms of warmest praise by those who have used it, and is deserving of further trial. One enthusiast is quoted as saying that he would prefer the combination to the antitoxin.

Angio-paralytic, or "Pulsating," Neurasthenia is the designation given by DANA (*Journal of the American Medical Association*, vol. xxiv, No. 4, p. 110) to a condition observed in neurasthenic patients, characterized by a sense of beating, of which they never lose consciousness. The tension of the pulse is low and the rhythm normal or but slightly accelerated. Palpitation is, as a rule, not present. There may or may not be tremor, but dermographism and epigastric pulsation are commonly present. Pressure on the carotid stops the beating. There are usually insomnia, nervousness, and mental depression. The condition has been observed in young men and in adults under forty. The abuse of tobacco and alcohol is sometimes an exciting cause. There is believed to be an abnormal relaxation of the arterioles and capillaries, so that the blood is thrown into vessels that have lost their resiliency and the pulse-waves are not fused together. The condition appears to correspond closely with that described by S. SOLIS-COHEN (*American Journal of the Medical Sciences*, February, 1894, p. 130) as vasomotor ataxia, of which it may be considered a sub-variety. In the milder and less typical forms cure is effected by the use of general and vasomotor tonics. In the more advanced cases ligation of an artery has yielded the best results. A prescription containing ferric chlorid, gr. ¼, potassium bromid, gr. x, hydrobromic acid, ♏ viij, and spartein sulphate, gr. iij, affords relief in many cases. Monobromated camphor and strychnin are often useful. Hydrotherapy is also to be recommended.

The Philadelphia Polyclinic is to be complimented both upon its improved appearance and upon the improved character of its general "make-up." Its editorial direction has fallen into strong and trustworthy hands, and the publication promises to exercise an important and salutary influence on ethical medicine and ethical journalism. The *Polyclinic* has further ranged itself with THE NEWS among the few weekly medical journals that acknowledge the pecuniary value of the literary work of medical men by making payment in cash or reprints for contributions.

SELECTION.

THE PRESIDENT OF HARVARD COLLEGE ON FOOT-BALL.

THE evils of the intercollegiate sports, as described in the president's report of last year, continue without real redress or diminution. In particular, the game of foot-ball grows worse and worse as regards foul and violent play and the number and gravity of the injuries the players suffer. It has become perfectly clear that the game as now played is unfit for college use. The rules of the game are at present such as to cause inevitably a large number of broken bones, sprains, and wrenches, even during trial or practice games played legitimately;

and they also permit those who play with reckless violence or with shrewd violations of the rules to gain thereby great advantages. What is called the development of the game has steadily increased its risks, until they have become unjustifiable. Naturally the public is losing faith in the sincerity of the professed desire of coaches, captains, and promoters to reform it.

It should be distinctly understood, however, that the players themselves have little real responsibility for the evils of the game. They are swayed by a tyrannical public opinion—partly ignorant and partly barbarous—to the formation of which graduates and undergraduates, fathers, mothers, and sisters, leaders of society, and the veriest gamblers and rowdies all contribute. This state of mind of the spectators at a hard-fought foot-ball match at Springfield, New York, or Philadelphia cannot but suggest the query how far these assemblages differ at heart from the throngs which enjoy the prize-fight, cock-fight, or bull-fight, or which in other centuries delighted in the sports of the Roman arena. Several fatal accidents have happened this year to schoolboys and college students on the foot-ball field; and in every strenuous game now played, whether for practice or in an intercollegiate or other competition, there is the ever-present liability to death on the field.

It is often said that by employing more men to watch the players, with authority to punish instantly infractions of the rules, foul and vicious playing could be stopped. The sufficient answer to this suggestion is that a game which needs to be so watched is not fit for genuine sportsmen. Moreover, experience indicates that it would be hard to find trustworthy watchers. Extravagant expenditure for the teams throughout the season, and by the spectators at the principal games, continues to disgust the advocates of simple and rational manly sports.

Meanwhile it is to be observed that there is much wholesome physical exercise taken and much genuine athletic sport enjoyed in the university, in ways wholly independent of these exaggerated intercollegiate games. The variety of the exercises and sports is always increasing. For two years past the class exercises on the floor of the gymnasium have been very useful; and during the current year military drill has been introduced.

The athletic sports and exercises which commend themselves to sensible teachers and parents are those which can be used moderately and steadily, and which remain available in some measure in mature life. Such are gymnasium exercises, walking, running, rowing, sailing, riding, cycling, tennis, gunning, bowling, and fencing. The youthful expert in any of these sports and exercises will carry into his strenuous professional life a great source of enjoyment and a real safeguard of health and of the invaluable capacity to endure without injury mental and moral stress. On the other hand, the games which demand so much practice and such severe training that the brain is temporarily dulled for all other use, or which require a combination of many individuals of like powers and tastes, or which contain as essential elements violent personal encounters, can have no direct application in the after-life of professional or business men. Moreover, all games which require intense training for short periods present a serious physical and moral danger for the players, the familiar danger of reaction when training stops. In education, therefore, it is the moderate and long-available exercises and sports which alone have real interest and value. The intense, highly competitive sports afford some stimulus for other and better things, but this stimulus is now too dearly bought.—*From Annual Report of President Eliot.*

CORRESPONDENCE.

ENTERIC FEVER IN PREGNANCY.

To the Editor of THE MEDICAL NEWS,

SIR: I have just read in your issue of the 26th inst. the interesting "Case of Enteric Fever Occurring in Advanced Pregnancy," by Dr. Stryker, and am reminded of the record[1] I made on the same subject thirty-six years ago.

At that long-ago date, in writing up the history of one-hundred-and-thirty consecutive cases of enteric or typhoid fever, derived from private practice, I said:

"Pregnancy and lactation I have not found to have any material influence upon the character of the disease. In fourteen cases of intermediate gravity, pregnancy existed in five, the advance of which was two months in two, three months in one, four-and-a-half months in one, and six months in the remaining one. None of these miscarried.

"Among the cases of malignant type, pregnancy existed in one at an advance of two months. Miscarriage occurred on the tenth day of the disease, and was not followed by any serious result. The patient began to improve by the twenty-first day.

"Of those who gave suck, two were of the mild and one of the malignant type. In neither of the former was the child denied the breast. In the latter case, during the second week of the fever, the secretion of milk was entirely suspended; the child was removed to a neighboring family and not permitted its mother's breast for the next two months, when an abundant secretion again took place."

Concerning the use of veratrum viride, the same record goes on to say: "Besides its signal property as an arterial sedative, it is capable of producing other excellent effects, to some of which attention has not been much directed. I allude more particularly to its diaphoretic tendency, and that it possesses this to a marked degree, and experience with the remedy during the past two-and-a-half years in the management of this and other acute diseases enables me to speak of its action with no little degree of confidence. In all proper cases of enteric fever, according to my own experience, it is a safe, reliable, and valuable adjuvant to other means employed for its successful management. I have administered it to the young and to the aged, to the delicate and robust, in the pregnant state at all its periods, and have not had cause to regret its effect. The accusation that it is an abortic agent, and therefore its employment is unsafe in general practice, is, I am persuaded, wholly without just foundation. So far indeed from possessing a tendency to produce abortion, further experience may possibly establish that, in certain conditions, this medicine may be beneficially employed for the purpose of defending the pregnant state. If my own experience does not directly contribute to establish this fact, it at least assists in proving the remedy free from the charge preferred against it. The following case is given in point:

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[1] Treatise on Enteric Fever. J. B. Lippincott & Co., 1859.

"Mrs. ———, thirty-six years of age, of very weak habit, the mother of seven children, aborted once at four months, sickened with enteric fever, January 1, 1858, pregnant at an advance of four-and-a-half months. During the first week the pulse ranged between 110 and 115 per minute, and by the twelfth day it was running at 130. Along with this state of the pulse there was restlessness, the skin hot and dry, pain in the small of the back and abdomen, with a slight show of blood from the vagina. Being warranted from previous experience to regard the veratrum viride as of service, I determined to bring my patient under its full influence. I began with Norwood's tincture, at the dose of five drops, and increased the quantity by two drops at each successive dose, every three hours, until the dose of eleven drops was reached, after which the pulse came down to 84, and the patient's condition was much improved, being free from pain, reduction of fever, and the whole surface covered with a gentle perspiration. To maintain this control of the symptoms, the dose of five drops was administered every four hours. Under the influence of this diminished dose the pulse ranged pretty steadily between 80 and 90 for the next several days. . . . The patient convalesced, went on to full term, and was delivered of a healthy child."

Away back in the forties and fifties the most successful plan of treatment of enteric fever consisted of diaphoretics, arterial sedatives, tepid and cold spongings of the general surface, to control excessive temperature. Now and then a heroic doctor could be found who resorted to cold wet-sheet-packs; the question as to the degree of fever being wholly decided by the feel of the patient's skin and condition of the pulse; for then the refinement of the clinical thermometer was not a vest-pocket ornament with country doctors. The sense of touch, cultivated to the most delicate impressions, was the guide, and the so-called "antipyretics" and "heart-failure" cut no figure in clinical reports. But now, in this year of our Lord, who can tell the number of patients that have been jeopardized by the readings of the clinical thermometer and the dread of innocent 103.5°!

Sincerely yours,

James E. Reeves.

Chattanooga, Tenn.

THE NECESSITY FOR A NATIONAL DEPARTMENT OF HEALTH.

To the Editor of The Medical News,

Sir: It is earnestly hoped that legislation for the establishing of a National Department of Health, or a National Health Bureau of some kind, will not be jeopardized or entirely defeated in the present Congress by differences among medical men as to the proper scope and character of the proposed law. The details of the scheme are of minor importance, and it would be well for medical men to waive somewhat in their preferences and endeavor to unite upon that which seems most feasible rather than divide upon different measures, and, from want of unanimity, secure nothing.

The importance of this measure can hardly be overestimated; nothing is of more importance than the health of the people, and there is every reason why there should be in the General Government a department or bureau charged with the duty of investigating the causes of disease, especially of epidemics, the collecting of statistics of diseases, health and mortality, and reporting upon all facts bearing upon the sanitary conditions of the people.

No one who has had occasion to examine the statistical reports of the health-boards in different cities and States of the Union need be told how imperfect, confusing, and unsatisfactory they are.

One of the first good results of the proposed department would be something like order and reliability in the reports from different parts of the country in the matter of disease and mortality, instead of the present incomplete conglomeration.

The President of the United States has, in his late message to Congress, recommended the inauguration of a National Board of Health, or similar national instrumentality, and a bill to that end is now before Congress. The scope of this bill is none too broad, nor its powers too great, for the work of collecting and collaborating reliable data as to the sanitary conditions in all parts of the country and presenting them in intelligible form as a basis for the action of local health authorities or of Congress.

Out of such a department we might expect to grow an institute similar to that founded at Berlin, under a special act of the German Government, for experimental investigations in the line of bacteriology.

A large part of the work of the antitoxin-treatment of diphtheria has been done in that institute or in connection with it. New discoveries in this direction are certain to be made, and we should have a national laboratory for such investigations.

The session of the present Congress ends in about four weeks from now, and if no action be taken before March 1st the question will go over to another Congress, and nothing may be done for two years or more.

Those who have this matter in charge should rouse themselves and push it at once and vigorously in some shape. If we cannot get the ideal measure, let us have what we can get.

Leonard Landes.

New York.

INFORMATION DESIRED AS TO THE EFFECT ON THE PROSTATE OF UNILATERAL CASTRATION.

To the Editor of The Medical News,

Sir: I would like to ask through your columns for information from surgeons in this country as to the effect of unilateral castration upon the total bulk of the prostate.

The existing evidence is scanty, but seems to point clearly to one-sided atrophy of the prostate as a common result of the removal of one testicle. Some experiments that I am now making on dogs corroborate this view, as does the observed condition of the prostate in monorchids. If it is found that the diminution in size extends to the other lobe, or if the shrinking of one lobe will in any large proportion of cases remove or lessen the mechanical obstruction to urination, it is obvious that the good effects of a simple and safe operation might at once be extended to a much larger number of patients and at an earlier and more favorable stage of the disease.

I now have several cases under observation, and hope by further experiment to throw more light on the subject; but conclusive clinical evidence must already be in existence, and I write in the hope that it will be sought for by those surgeons who have removed one testicle for disease or injury and whose patients are accessible for examination. I am, sir,

Yours, etc.,
J. William White.

1810 S. Rittenhouse Square, Philadelphia.

MORPHINISM IN CHILDREN.

To the Editor of The Medical News,

Sir: I am desirous of adding to the clinical literature of morphinism in children. If any reader of your journal has met with a case and will furnish me details, I shall appreciate the favor and give full credit.

Respectfully, J. B. Mattison.

Brooklyn, N. Y.

NEWS ITEMS.

Professor Ed. Külz, a well-known physiologist, died on January 13th, at Marburg, of appendicitis.

The Society for the Relief of Widows and Orphans of Medical Men of New Jersey was incorporated in 1882, and has continued to grow both in influence and membership. Since its organization 241 physicians of the State have become members, of which number 22 have died, 28 have been dropped for various reasons, leaving at the present time 191 active members. The Permanent Fund amounts to $1338.42, and it is intended eventually to allow small annuities to widows and minor children in cases of need. The amount already paid to the families of deceased members amounts to $2478. The total cost of conducting the society during the past year was $19.67.

BOOKS AND PAMPHLETS RECEIVED.

Some Statistics of Diabetes Mellitus. By N. S. Davis, Jr., A.M., M.D. Pamphlet. Decatur, 1894.

The Proceedings of the Fourth Annual Meeting of the Association of Military Surgeons of the United States. Held at Washington, D. C., May 1, 2, and 3, 1894. St. Louis: Buxton & Skinner Stationery Co., 1894.

A Retaining Splint for Excisions of the Hip-Joint, with a Case. By Stewart LeRoy McCurdy, M.D. Reprinted from the Pittsburg Medical Review.

Old and Neglected Deformities following Infantile Spinal Paralysis. By Stewart LeRoy McCurdy, M.D. Reprinted from the Columbus Medical Journal, 1894.

New York Letters on Orthopedic Surgery. By Stewart LeRoy McCurdy, M.D. Reprinted from the Columbus Medical Journal, 1894.

The Use of Traction in the Treatment of Joint-Diseases. By Stewart Le Roy McCurdy, M.D. Reprinted from the Pittsburg Medical Review, 1894.

Some Cases of Pneumonia. By James Herbert McKee, M.D. Reprinted from the Archives of Pediatrics, 1894.

Prophylaxis in the Treatment of Tuberculosis. By Lawrence Flick, M.D Reprinted from the University Medical Magazine, 1894.

Valedictory Address to the Graduating Classes in Medicine, Dentistry, and Veterinary Medicine of the University of Pennsylvania. By Louis A. Duhring, M.D. Delivered June 7, 1894. Philadelphia: J. B. Lippincott Company, 1894

Erosions and Lacerations of the Cervix Uteri. By George H. Simmons, M.D. Reprinted from the Journal of the American Medical Association, 1894.

U. S. Department of Agriculture. Report of the Chief of the Division of Microscopy for 1893. By Thomas Taylor M.D. From the Report of the Secretary of Agriculture for 1893. Washington: Government Printing Office, 1894

Four Cases of Chronic Pulmonary Involvement, with Features of Special Interest. By E. R. Axtell, M.D. Reprinted from the New York Medical Journal, 1894.

The Johns Hopkins Hospital Reports, Vol. IV, No. 6. Report in Surgery, II. The Results of Operations for the Cure of Cancer of the Breast Performed at the Johns Hopkins Hospital from June, 1889, to January, 1894. By William S. Halsted, M.D. Baltimore: The Johns Hopkins Press, 1894.

Laparotomy Consecutive to an Operation for Suppurative Appendicitis. By Dr. Olaf Page. Reprinted from the Revista Medica, 1894.

Essentials of Chemistry and Toxicology, for the Use of Students in Medicine. By R. A. Witthaus, A.M., M.D. Twelfth edition. New York: William Wood & Co., 1894.

New Instruments. By Seth Scott Bishop, M.D. Reprinted from the Journal of the American Medical Association, 1894.

A Synopsis of the Practice of Medicine. By William Blair Stewart, A.M., M.D. New York: E. B. Treat, 1894.

A Dictionary of Medicine, including General Pathology, General Therapeutics, Hygiene, and the Diseases of Women and Children By Various Writers. Edited by Richard Quain, Bart., M.D. Lond., LL.D. Ed., F.R.S. Assisted by Frederick Thomas Roberts, M.D. Lond , B.Sc., and J. Mitchell Bruce, M.A. Abdn., M.D. Lond. With an American Appendix, by Samuel Treat Armstrong, M.D., Ph.D. New edition, revised throughout and enlarged. In two volumes. New York: D. Appleton & Co., 1894.

A Case of Chronic Peritonitis, with Intestinal and Abdominal Fistulæ—Enterorrhaphy—Recovery. By Frederick Holme Wiggin, M.D. Reprinted from the Medical Record, 1894.

American Association to Promote the Teaching of Speech to the Deaf. Fourth Summer Meeting, Chautauqua, N. Y., July, 1894. Abnormalities of the Upper Respiratory Tract and Ear. Found Commonly Among Deaf-Mutes. By Arthur Ames Bliss, A.M.,M.D. Pamphlet. Rochester: Western New York Institution for Deaf-Mutes, 1894.

A Review of the Relations Between the State and the Medical Profession in New York. By Frank Whitehill Hinkel, A.M., M.D. Reprinted from the Buffalo Medical and Surgical Journal, 1894.

Travaux d'Eléctrothérapie Gynécologique. Archives Semestrielles d'Eléctrothérapie Gynécologique Fondées et Publiées, par le Dr. G. Apostoli. Paris: Société d'Édition Scientifiques, 1894.

Bureau of Education, Circular of Information No. 2, 1893. Contributions to American Educational History. Edited by Herbert B. Adams. No. 14. The History of Education in Connecticut. By Bernard C. Steiner, A.M. Washington: Government Printing Office, 1893.

Bureau of Education, Circular of Information No. 3, 1893. Contributions to American Educational History. Edited by Herbert B. Adams. No. 15. The History of Education in Delaware. By Lyman P. Powell, A.B. Washington: Government Printing Office, 1893.

Bureau of Education, Circular of Information No. 5, 1893. Contributions to American Educational History. Edited by Herbert B. Adams. No. 16. Higher Education in Tennessee By Lucius Salisbury Merriam, Ph.D. Washington: Government Printing Office, 1893.

Should Cases of Tubercular Consumption be Reported to the Local Boards of Health? By J. F. Jenkins, M.D. Reprinted from the Journal of the American Medical Association, 1894.

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ORIGINAL ARTICLES.

A NEW DIAGNOSTIC SIGN FOR THE EARLY RECOGNITION OF CARCINOMA OF THE STOMACH.

BY D. D. STEWART, M.D.,
LECTURER ON MEDICINE IN THE JEFFERSON MEDICAL COLLEGE; DIRECTOR OF THE STETSON CLINICAL RESEARCH LABORATORY, ETC.

RECOGNIZING, through some experience in the management of gastric disorders by modern methods of research, the extreme value of data tending to the early diagnosis of malignant disease of the stomach and its separation from affections less grave that often intimately simulate it, it was with great gratification that I read the result of Boas' further investigations as to the significance of a lactic-acid reaction in gastric disease, first mentioned in the second edition of his work on the stomach. In the paper[1] in which the result of his research appears data were given so strongly supporting his earlier assertion, that a marked lactic-acid reaction indicates carcinoma of the stomach, that it was evident the matter merited the serious attention of the clinician.

The utter inability usually to diagnosticate positively a malignant gastric neoplasm in its early stage, when so situated that the presence of the tumor is undetermined until a period too late for surgical interference, naturally renders one who feels there is no higher court keenly desirous of more certain differentiation-methods than we possess. This is especially felt by the physician, also, on account of the anxiety he must experience in his frequent inability to assert positively that an ailment is not carcinomatous, in the presence of certain forms of gastric disease of insidious and seemingly grave nature, occurring in the middle period of life, of neural or inflammatory origin, the symptomatology and course of which so often intimately suggest a malignant growth.

The early idea that the absence of HCl from the stomach-contents was diagnostic of carcinoma, which arose through the investigation of von den Velden, unfortunately could not be subsequently confirmed, and it is now generally recognized that in a large number of diverse gastric affections, primary or symptomatic, free HCl may be either temporarily or permanently absent. The memory of the once grave import attached to this sign when free HCl was absent for at least a considerable time, in the face of pronounced symptoms, and at an age when the occurrence of carcinoma was possible, and the earlier errors in judgment not infrequently so originated when faith in this indication was strong, should lead one to examine very critically the evidence concerning this new dictum of Boas, which, if true, is so valuable.

With these thoughts in mind I have concerned myself with an examination of the matter since becoming aware of Boas' earlier results. My desire has been to investigate impartially the subject before saying a word concerning it, and then presenting finally personal evidence *pro* or *con* that could be regarded as conclusive. Unfortunately for my purpose, in the past sixteen months a dearth of that ample and suitable material from which data for conclusive opinion could be finally given, and the too brief time that has elapsed for such positive judgment, do not allow of report now. I regard it essential to direct attention to the subject thus prematurely, however, in order to bring to the notice of the readers of THE MEDICAL NEWS some results of Boas' work, for the purpose especially of correcting a misapprehension that may have been created by some remarks in a paper recently published in these columns, on "The Treatment of Lactic-Acid Excess in the Stomach."[1] In this paper the author, referring very briefly to the result of Boas' valuable investigations, and presumably familiar with the technique employed by the latter, remarks that his own experience entirely negatives Boas' conclusions. He then specifically states that, unlike Boas, he has encountered lactic acid in the stomach, not only during the first part of normal digestion, but also under abnormal conditions, whether these are accompanied by persistent diminution in the secretion of HCl, or in its absence, and in such affections as sluggish motility and gastrectasia, with or without malignant disease, especially when so situated as to cause stenosis.

Although it is evident to me, it cannot be to those not familiar with Boas' work, that the author of this statement has not employed Boas' technique, and is unaware of the very grave errors and utterly useless results that must arise from such inattention, naturally leading to misapprehension and tending to bring the praiseworthy investigations of Boas, from which so much may be expected, into early and undeserved discredit.

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[1] Entitled, "The Occurrence and Diagnostic Value of Lactic Acid in the Stomach," Münchener medicinische Wochenschrift, October 24, 1893.

[1] By Dr. A. A. Jones.

The past researches of Ewald and Boas, as is well known, indicated that fermentation lactic acid[1] is regularly formed during the early stage of normal gastric digestion, and that its inhibition and final disappearance occur only in the presence of some amount of unsatisfied free HCl,[2] and this is still accepted by the many who similarly cling to the ancient idea that lactic acid is a very common accompaniment of the fermentative processes of chronic gastritis and other affections of the stomach, in which there is great diminution in or absence of free HCl. This view was dominant until the recent researches of Martius and Lüttke on HCl-determinations in the stomach, during which these investigators first showed that lactic-acid formation does not occur normally in the stomach, as was supposed, and that, moreover, it is absent under conditions in which its presence had been supposed to be quite constant. Previous erroneous results originating the former view have apparently arisen through either trial-meals having been given that contained preformed lactic acid or its compounds, or through sources of error not then apparent in the application of the tests for lactic acid. The results of Martius and Lüttke were so constant as to the evidence of absence of lactic acid both in normal gastric digestion and in chronic gastritis that Boas, in view of these, instituted a reinvestigation of the whole subject. As concerns the former of these points, Boas soon ascertained the highly significant fact, perhaps explanatory of former contrary results and of those of a contrary nature obtained by Dr. Jones,[3] referred to, that *all products of the bakery contain, preformed, an appreciable amount of lactic acid.*[4]

Adopting a form of trial-meal[5] from which error could not arise—a flour-soup, the ethereal extract of which was found not to contain even the minutest traces of lactic acid or lactates—and taking the precaution, first, to cleanse by lavage the stomach in any case in which retarded propulsion would permit remnants of a former meal to be present and falsify the issue, his results have been invariable that not only is lactic acid not present at any stage of normal digestion, whether free HCl be absent or not, but that *it is constantly absent also in all affections of the stomach save carcinoma.* Boas, moreover, found that in the latter lactic acid is usually present during the digestive process in such amounts and at such an early period that by its recognition the ailment may be readily diagnosticated, when other symptoms, such as tumor and increasing cachexia, are yet absent and strong hope exists for a cure by operative means.

Researches in Boas' clinic were made on all types of chronic diseases of the stomach, with the exception of ulcer, in the latter of which Boas naturally regards it as inexpedient either for diagnostic or therapeutic purposes to employ the tube. These cases include a large number of atony, chronic gastritis, pyloric stenosis with consecutive dilatation, and, finally, carcinoma. *In all of these, with the notable exception of the last, even although in the non-malignant cases with pyloric stenosis the trial-meal was allowed to remain over night in the stomach, and marked fermentative processes had occurred, with the presence of sarcinæ, yeast-fungi, hydrogen sulphid, acetone, and the like, lactic acid was always absent.*

In marked contrast to this were the results in the cases of carcinoma. In twenty out of the twenty-one cases studied, whether encountered before the presence of tumor or subsequently, lactic acid was constantly present in such an amount as to give a marked reaction to such a coarse test as that of Uffelmann. In the greater number of these cases there was delayed propulsion, the stomach containing in the morning the remnants of food ingested the evening before. This was especially noted even in the early stage in those cases in which the lesser curvature was afterward shown to be the seat of the growth. In all of the twenty-one cases free HCl was constantly absent. A strikingly interesting feature that forcibly illustrates the practical diagnostic value of Boas' observations, if further fully confirmed, is the fact that four of these cases came under observation at a very early stage, before any indication of tumor was detectable, and that a diagnosis made by the lactic-acid finding was fully verified by the subsequent development of the characteristic symptoms, including the presence of tumor, and in one of the three, still later, by a necropsy.

This last case is probably that referred to by Cohnheim, of Boas' clinic, in an interesting paper[1] on the early diagnosis of gastric carcinoma. This case is of such striking interest that it merits brief mention here as illustrative of the value of this new diagnostic point.

The patient, a male, forty years old, presented himself at the Polyclinic in Berlin during April,

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[1] As distinct from sarcolactic acid existing in flesh.

[2] From 0.01 to 0.07 per cent.

[3] That is, accepting that all sources of error in the application of the tests for lactic acid were eliminated, as is, of course, to be supposed.

[4] Boas' words are: "Allein es hat sich gezeigt—und das ist ein cardinaler Punkt—dass sämmtliche im Handel vorkommenden Gebäckarten mehr oder minder grosse Mengen Milchsäure präformirt enthalten. Alle meine Versuche, mir ein absolut milchsäurefreies Gebäck zu verschaffen, blieben resultatlos."

[5] This consisted specifically of a thin gruel made of a tablespoonful of oatmeal flour to the liter of water, and flavored with salt.

[1] Deutsche medicinische Wochenschrift, May 17, 1894.

1892, with symptoms that first led to the diagnosis of gastric ulcer, on which account examination of the secretory function of the stomach was made. He at first improved on the treatment instituted, and the painful areas, anteriorly and dorsad, suggestive of ulcer, disappeared. Shortly afterward he again returned for treatment, with renewed symptoms, including repeated vomiting. A gastric examination was now made and disclosed absence of free HCl; very pronounced presence of lactic acid, and marked stagnation of the ingesta, but without as yet decided dilatation of the stomach. These findings were obtained with all subsequent—a good number of—tests made. Although no tumor was apparent by the end of May, 1892, Boas diagnosticated gastric carcinoma, from the fact of the decided amount of lactic acid always present, the total absence of free HCl, repeated vomiting, decided loss of flesh, and the development of pronounced symptoms of gastric disorder without demonstrable cause.

Under lavage decided improvement occurred, and after two-and-a-half months' treatment the patient was discharged. Two months subsequently (August, 1892) symptoms had recurred, loss in weight continued, and some cachexia had now appeared. The liver was apparently enlarged, yet no tumor was appreciable to palpation. He was again lost sight of, but was finally seen in December, 1892. He then had lost eighty pounds in flesh. The vomit was at times of a "coffee-ground" appearance; there was edema; some swelling of the inguinal glands; fissured, uncoated tongue; a weak, easily compressible pulse. Between the right sternal and parasternal lines, halfway between the xiphoid process and the umbilicus, could now, for the first time, be felt a tumor that seemed to spring from the liver. The stomach was not enlarged to inspection, and no splashing sound was to be obtained. By percussion the greater curvature was found to occupy the umbilical region. The patient shortly afterward died. A necropsy revealed a hard tumor, the size of an apple (an adeno-carcinoma, rich in connective tissue, ulcerated on its mucous surface), occupying the pyloric region and sharply defined from the remainder of the stomach. The pylorus was patent to one finger. The tumor had not been demonstrable to palpation until late in the course of the ailment, because of its being entirely covered by the liver. Resistance in the region of the gall-bladder, which had been felt and which had been regarded as a metastasis to the liver, had been produced by this tumor so overlapped. This error, considering the unusual position of the growth, was venial.

These results, in the hands of so competent an observer as Boas, very naturally interested me greatly, as my own work lies so largely in a similar field. Although I am as yet unprepared to offer the data I have obtained from an investigation of the subject to the present, because, as remarked, of paucity of material and prematureness of opinion, I may rightly state here that thus far my observations are all in support of Boas, and I have come to feel that much may be expected from this new diagnostic sign.

Apart from its obvious practical positive value, my present experience indicates that it may be regarded of the greatest utility from a negative standpoint, although it is, perhaps, early to speak very positively as to this now. I can at least say that it has stood me in good stead on more than one occasion already. It will be of interest and profit to relate that more than a year ago, when I began routine examinations for lactic acid after Boas' method, and following his technique, I failed to obtain reactions for it in gastric ailments obviously, without this test, not carcinomatous, and I likewise obtained persistently negative results in several cases which then presented, as regards the usual clinical picture, symptoms among not the least of which were loss of weight, more or less cachexia, and a favorable age, strongly suggestive of incipient malignant disease of the stomach. But the continued absence of lactic acid enabled me to take a more hopeful view, which the sequel has in each case supported.

One of these cases is worthy of notice here. It is that of the mother of one of my former clinical assistants, brought to me in November, 1893, for an opinion because of the gastric ailment being regarded by an earlier attendant as of the nature of possible malignant disease.

The patient, forty-seven years old, who for several years past had had dyspeptic symptoms, developed, somewhat less than a year previously to my seeing her, more or less continuous gastric pain, increased by food often of the plainest sort; there were constipation and vomiting; anorexia was complete, and she had lost much flesh within a few months. This last was apparently largely due to the fact that she had been kept upon a strictly milk diet for a long time. She had frequent attacks, lasting for from some hours to one or two days, in which there was great prostration, with dyspnea, an almost extinct pulse at the wrist, and a very feebly acting heart. When not suffering from these attacks the heart was in fair condition, with a pulse of moderate tension. The patient was highly anemic, somewhat emaciated, with what then seemed a trace of cachexia. The teeth were very imperfect, the breath foul from the latter, and the tongue usually slightly furred. Constant salivation was present. The epigastric area was tender to pressure, slight or deep, and, apparently, more so at the site of the greater curvature and near the pylorus. No evidence of tumor was obtainable. The stomach showed slight dilatation by auscultatory percussion, reaching, when only slightly distended with air and otherwise empty, to within an inch of the umbilicus. The area of liver dulness was normal; no displacement of the right kidney existed. The urine was free from albumin; urea was normal in amount.

Several gastric examinations made within a few days of each other all showed: Absence of free HCl; no Günzburg's response until from (variously on different occasions) 0.5 to 2 c.c. of $\mathrm{HCl}\frac{N}{10}$ were added to 10 c.c. of the filtrate. Total acidity, usually from 20 to 30. Digestion-test was but slightly positive in from eight to ten hours, even with the addition of HCl up to 0.2 per cent. free acid. The lab-test was delayed (upward of five hours) in the incubator. The labzymogen-test was positive only at the end of one hour. Gastric propulsion was sluggish; one-and-a-half hours after an Ewald trial-breakfast (a roll and 300 c.c. water) upward of 160 c.c. could be removed. On alternate occasions there were given the baker's-roll breakfast and that of from two-thirds of a pint to a pint of thin gruel. With the former a slight lactic-acid reaction was usually obtained, while with the latter no traces of lactic acid even existed.

Jaworski's test showed no pronounced atrophy of the secretory structure.

Diagnosis: Aggravated chronic gastritis, perhaps originated by the condition of the mouth.

The patient was at once sent to a dentist, and, as her strength permitted, the bad teeth were removed and the mouth put into order.

I instituted a very carefully regulated diet; at first very easily digested, and often of predigested food. Systematic daily lavage was begun, Carlsbad salts were given for constipation, and codein, cannabis indica, and belladonna, for periods of a few days, were used for gastric pain; and the belladonna also to control salivation. At first, for a time, and later for shorter intervals, dilute HCl was administered before meals when predigested food was not given. At the outset it was employed in small, and subsequently in large doses, when nitrogenous solid food was eaten, as a stimulator of secretion and motility. An active preparation of papain was used after meals. Later, to assist in remedying the anemia, the mixture of iron carbonate was given in teaspoonful-doses after meals, and strychnin and nitro-gylcerin were employed for the attacks of prostration. Improvement was soon apparent in the subjective symptoms. The appetite returned somewhat. Pain was no longer continuous, but occasionally it was as severe as before; on pressure it had also lessened, and vomiting was less frequent. The tongue soon cleared, and fetor of the breath disappeared, as did finally all tendency to salivation; but at the expiration of four months there was no alteration in the condition of the secretory function of the stomach, although propulsion had slightly improved. Daily lavage could not be continued steadily, because of the exhaustion its practice occasioned, and cascara was substituted for the Carlsbad salts, to remedy the constipation, on account of the salts apparently aggravating the gastric pain. Secretion of free HCl being still lacking after a number of months of the foregoing treatment, intragastric galvanism and faradism were begun and continued in combination, and after several weeks faradism alone for some two months, with still no decided change in secretory function. She was then removed to the seashore. After a few weeks, during which I did not see her, I was informed that although she looked better she still had gastric pain, occasionally vomited, and that on several occasions during morning lavage, while fasting, a little blood and a few particles resembling small pieces of tissue were seen in the water. Unfortunately, these latter had not been saved for examination. When seen later—in August, 1894—her weight was still eight pounds less than in the winter, probably partly due to change in weight of wearing-apparel. Nothing had been noted in the wash-water for some time. Appetite then was moderate. Epigastric pain and tenderness persisted, but were less in degree than formerly. No tumor was evident and no cachexia. Lactic acid and free HCl were still absent.

This case in several of its features strongly suggested the possibility of one form of latent gastric carcinoma, and had the result of the non detection of lactic acid been contrary, with the coincident steady absence of free HCl under treatment likely to promote its return, I should have regarded it as within the range of probabilities and given a gloomy prognosis. Since the end of summer steady improvement has occurred under the use of full doses of HCl, strychnin, iron, and lavage twice or thrice weekly, and when recently seen the woman presented no indications suggestive of grave disease, although free HCl has not returned.[1] She had regained all the weight lost; had a good color and a good appetite and ate and digested well through the aid of HCl or papain.

The method employed by Boas for the detection of lactic acid in the earlier part of his experiments was the color-test of Uffelmann, so generally used for a like purpose everywhere, because of its simplicity of application and, when certain very important precautions are observed, its accuracy.

A large series of experiments in Boas' clinic convinced him that no color approaching that of the lactic-acid reaction save a *decided* citron-greenish yellow (Cohnheim), or a canary-yellow,[2] could be depended upon; and the fact must be borne in mind that a considerable number of substances react to the ferric-chlorid test in a manner approaching the response of lactic acid, although not so intensely or with the same hue. A differentiation may, therefore, be made by one practically familiar with this color-test. Such substances as acid phosphates, sugar, alcohol, tartaric acid, encountered constantly or occasionally in the stomach-contents, may all mislead the unwary. When this test is employed and a positive reaction is obtained, it is always essential to exhaust a portion of the gastric filtrate with ether, and further test an aqueous solution of the residue. By this means all sources of error, save alcohol, are removed.[1] Great care must be exercised in the application of such an apparently simple test even as that of Uffelmann or its modifications, and the judgment of none without some practical training in chemic manipulation and acquaintance with the shades of color yielded by varying amounts of lactic acid and its simulators is to be depended upon. Especially is this the case when so much hinges upon an opinion in a matter so weighty as the determination of the presence of lactic acid now becomes.

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[1] An examination after the flour-soup meal at the date of this writing gave the following: One-and-a-half hours after the trial-breakfast, the stomach having been washed the evening before, 100 c.c. were removed by aspiration; the gruel well solved, t. a. = 24; no response to freshly-made Günzburg's solution; no traces of lactic acid. Lab-test positive in one hour; lab-zymogen within one minute. Because of the quantity of filtrate used for the lactic-acid experiment, sufficient was not left for the digestion-test or for examination as to bound HCl.

[2] Boas speaks of the special hue of these decisive colors as either *saturated canary-yellow* or a *zeissig-yellow*. Any other coloration cannot be regarded as conclusive.

As regards negative results, error may also arise. Ewald speaks of such an observer as Cahn, of Strassburg, who could not at first confirm Ewald's findings as to the presence of lactic acid in the digestion of meat.

The sources of error with Uffelmann's reagent and its lack of delicacy, the inability to depend upon a response unless of the characteristic color mentioned—to produce which its presence in some amount is required—finally led Boas to seek another method that would be of value clinically as well as more exact chemically, and at the same time of far greater delicacy. He finally perfected such a method, which is simple of application, especially when qualitative results only are desired. This method is based upon the fact that when substances containing lactic acid are carefully heated with oxidizers, such as manganese dioxid and sulphuric acid, the lactic acid is decomposed into formic acid and acetic aldehyd. The presence of the last is readily determined by a number of tests. Boas regards the iodoform-test as well suited for both qualitative and quantitative work. By it, the aldehyd conducted into an alkaline solution of iodin forms iodoform. A quantitative examination is possible by this method from the fact that under proper precautions a definite amount of aldehyd decomposes a given quantity of iodin-solution. Ketone and alcohol, which both react similarly, are readily eliminated by first concentrating the filtrate to be tested to a syrupy consistence. As carbohydrates, similarly treated with oxidizing agents, also yield aldehyd, a watery solution of an ethereal extract[2] of the condensed gastric filtrate, of a non-lactic-acid-yielding trial meal, must alone be used in the experiment. Special treatment is also required of the filtrate before concentration, should it show the presence of free acids to congo.[1] As this test properly applied is without sources of error and its manipulation is most easy to one accustomed to chemic work, and it is, moreover, one of great delicacy, it should undoubtedly supplant the old uncertain method of Uffelmann or its modifications.

The scope of this paper—intended merely as a preliminary note and already too lengthy—does not admit of discussion of the most interesting problem as to the cause of the gastric formation of lactic acid only in carcinoma: Whether it be through the production of a lactic-acid enzyme, by the specific agency of the carcinoma, or through the latter alone favoring the abundant development of lactic-acid-generating micro-organisms, probably derived from the mouth, of which more than one variety exists. This question, so interesting and important, will receive due attention in a subsequent paper.

THE INDICATIONS FOR AND THE NATURE OF TREATMENT IN SEVERE ABDOMINAL INJURIES AND INTRA-ABDOMINAL HEMORRHAGE, UNACCOMPANIED BY EXTERNAL EVIDENCE OF VIOLENCE.[2]

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Every surgeon has undoubtedly at some time in his experience, either in private or hospital practice, met with cases of the class covered by the title of this paper. These are cases in which the history and general condition of the patient give the impression that there is a serious lesion within the abdomen, and yet, upon examination, we find total absence or only slight evidences of injury. The tendency, I fear, with many is to treat these patients tentatively, only to be awakened at the autopsy to the fact that a rupture or a tear existed in the abdominal cavity, which could have been relieved by early radical operation.

The mortality in these cases is appalling. References to the literature of the subject will amply bear out this statement, which is readily accounted for by the nature of the injuries. When the lesion is of the liver or spleen, if the patient does not die of shock or hemorrhage, a violent peritonitis supervenes, to which he shortly succumbs. If the liver, spleen, or kidneys are involved, death from hemorrhage may ensue in a very short time. Should the stomach, intestine, or bladder be ruptured, and its contents poured into the peritoneal cavity, death from peritonitis will result. In rupture of the mesentery the danger is from hemorrhage, yet, when the opening in the mesentery is small, a clot may form sufficiently large to control the bleeding. Should death occur under these circumstances it would be the result of peritonitis, caused by free blood in the peritoneal cavity. I shall report a case of this character in which recovery followed immediate operation. In ruptured extra-uterine pregnancy death is due either to hemorrhage or to peritonitis.

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[1] It must be remembered that all preparations of ether, save that especially obtained without, contain considerable alcohol.

[2] Prepared with an absolutely alcohol-free ether.

[1] This excellent method I mention here in outline only. The process itself is treated in detail in a paper by Boas in the Deutsche medicinische Wochenschrift, September 28, 1893.

[2] Read before the Philadelphia Academy of Surgery, January 7, 1894.

The usual history of these cases, with the exception of those of extra-uterine pregnancy, is that the patient has received a direct injury to the abdomen, which is found to be unaccompanied by external evidence. These injuries may result from railroad accidents, from being caught between cars, or from blows upon the abdomen received in various ways.

This class of injuries is quite common in military surgery, more so in the past, when spherical balls were used with only a low velocity. A majority were supposed to be caused by the violence of the wind displaced by the passing ball; but we now know that they were due to the impact of balls almost entirely "spent." Two cases that illustrate this occurred at the siege of Sebastopol. In neither did the clothing or the abdominal walls show any signs of injury, but in both the liver and spleen were comminuted to a pulp, and the intestines were extensively lacerated.[1] As yet we have had no reports from the surgeons of the armies engaged in the present strife between Japan and China, but it will be of great interest to read the records of such cases. We can expect, I think, a very full and detailed account from the Japanese surgeons. We have all applauded the work of some brilliant individuals of the Japanese profession, and, in fact, we must assign to Japan in medicine the same standing that she has taken in other walks of civilized life, and which she has demonstrated she can hold.

The most prominent symptom is pain, which is accompanied by shock, the degree of which is dependent upon the extent of the injury and the temperament of the indvidual.[2]

The pain is peculiar, and difficult to describe, but is readily recognized by one who has seen many of these cases, and by the patient himself. It is not that of ordinary intra-abdominal affections, but is described by the patient as if something had given way or ruptured, and is usually accompanied by a consciousness of impending death. It is usually accompanied by tenderness, which will be more or less localized, unless the ensuing peritonitis be general. In the early stages of the injury, when shock is most profound, the pain may not be so pronounced, and if large doses of opium be administered it may be masked throughout the course of the trouble. When vomiting is present it is usually associated with pain. Rarely does the vomited matter contain blood. There is often seen a characteristic rigidity of the abdominal walls which is due to intra-abdominal irritation. I have seen this so pronounced as to recall to mind the checker-board appearance of the normal abdominal walls as represented in the pictures of the early artists.

In the cases I have observed, consciousness has invariably been preserved for varying periods of time. Restlessness is not usual in the early stages, except in severe hemorrhage; but later on, when peritonitis develops, it is not an uncommon symptom. The pulse and temperature vary according to the degree of shock. The former is weak and running, varying from 100 to 160, and the temperature is subnormal. If reaction take place, the pulse becomes stronger and less frequent, and the temperature reaches the normal line. After reaction peritonitis is invariably the rule, and is accompanied by an accelerated pulse of high tension. The temperature under these circumstances is unreliable, as it does not correspond to the degree of inflammation or of septic infection. A high temperature with a slow pulse is less significant than a rapid pulse with a low temperature. In cases of septic peritonitis, in which autopsy has revealed a belly-cavity full of foul pus, I have seen the temperature run a normal course throughout the disease.

The part the sympathetic system of nerves, which has its largest distribution in the abdominal cavity, may play in injury to the abdomen is important in considering the differential diagnosis between simple contusion and contusion accompanied by visceral lesion. In the former, the absence of the severe and characteristic pain, of constant and persistent vomiting, of the anxious expression and presentiment of impending death, and of any evidence of loss of blood, associated with the occasional presence of suddenly developed meteorism, will usually be sufficient to establish the differential diagnosis. This condition of meteorism is due to paralysis of the muscular coat of the bowel consequent upon the concussion of the plexuses. There are cases, however, in which it is very difficult to say definitely whether there be a visceral complication or not. Under these circumstances one can only wait for a comparatively few hours, when, if improvement is not apparent, the operative course is to be pursued. When the solid viscera are the seat of injury, hemorrhage will be the main source of anxiety. The pain and the exsanguination give the clue. If the patient should react, which is unusual unless the kidney is the injured organ, we shall find in addition dulness on percussion in the flank. Rectal or vaginal examination may afford aid in determining the presence of a collection of blood in the pelvis. The solid organs suffer most from external violence on account of their fixity, density, and close proximity to the bony structures. The liver is the most often injured, then the uterus, the spleen, and the kidney, in the order named. The stomach is least often injured, there being very few such cases on record. Dr. J. W. Goff (*Medical and Surgical Reporter*, 1892) reports a case of ruptured stomach following a horse-kick of the abdomen, and verified by an autopsy. The shock was profound, and there was vomiting with an absence of blood. The author states that he believes immediate operation would have saved the patient's life.

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[1] Mr. Hulke, Lancet, December 31, 1892.

[2] I may say here that temperament and nationality have a strong bearing on the production of shock. Persons of a highly nervous temperament suffer more from shock than do phlegmatic individuals. For example, Americans are far more liable to suffer a severe degree of shock following injuries or operations than are Germans.

In the *Glasgow Medical Journal* for 1894, volume xli, Andrews reports a case of rupture of the stomach without external evidence of violence, in which all the symptoms of a serious visceral lesion were present, with the exception of vomiting. The rupture was in the anterior wall, was about an inch long, and involved all the layers. I cite this case as one of special interest, on account of the location of the tear and the absence of vomiting.

The liver is the organ most often affected, because of its position beneath the ribs and against the spine, and because it is held firmly in place by strong ligaments and bloodvessels. It is most commonly ruptured on its upper surface, generally in the right lobe, and in a majority of such cases the injury proves fatal. Dr. H. P. Loomis (*Medical Record*, January, 1893) reports a case in which the patient was struck on the right side by a pole protruding from the back of a wagon turning a corner, without external evidence of violence. There was a 3-inch tear in the right lobe of the liver and a pint of blood in the abdominal cavity. The patient died in the street from hemorrhage, before medical aid could reach him.

Mr. Battle (*Lancet*, 1894) reports a case of rupture of the bile-duct in a boy, six years of age, who was run over by a hansom cab, and in which there was but slight shock, without much pain or tenderness. Vomiting began early and persisted. On the fifth day slight jaundice developed. An operation was performed on the eighth day, and the abdominal cavity was found filled with bile. The boy died on the morning of the ninth day. At the autopsy the liver and gall-bladder were intact, but about one-half an inch beyond the junction of the cystic and hepatic ducts the common duct was found to be torn completely through. No other injury was found.

J. E., aged forty-six years, was admitted to the German Hospital on November 17, 1893, suffering from injuries received by being struck by a locomotive. He had a compound fracture of the lower jaw, lacerated scalp-wounds, and fracture of four ribs on the left side, with no other signs of injury. He died six hours later. The post-mortem examination revealed hemothorax of the left side. The peritoneum was not perforated or otherwise injured, but the peritoneal cavity was filled with blood. The spleen was completely comminuted, and the left kidney had been forced from its bed and was floating in the retro-peritoneal space. There was an extensive hemorrhage between the layers of the mesentery and a hemorrhagic extravasation in the posterior wall of the stomach.

H. M. C., colored, aged sixteen years, was admitted to the German Hospital on the evening of December 3, 1894. While playing about some moving freight cars he had been accidentally caught between the bumpers, sustaining an injury of the abdomen. Examination upon admission failed to disclose any evidences of external injury. The introduction of a catheter gave exit to clear urine. There was a moderate degree of shock, and the patient complained of severe pain in the abdomen and tenderness upon palpation. Further investigation proved negative.

The resident surgeon, not deeming the case of sufficient severity to send for me, treated the patient for shock. When I examined him the following day, it was very evident from the severity of the abdominal pain and tenderness, associated with very decided rigidity of the abdominal walls, that the patient was suffering from a serious intra-peritoneal lesion. I decided to open the abdomen at once. As soon as the peritoneal cavity was opened a large quantity of dark liquid blood escaped. The small intestines were delivered, when the cause of the lesion was found to be a ruptured mesenteric vein, the bleeding from which was arrested by the presence of a large diffused blood-clot occupying the interval between the layers of the mesentery. To make sure that there was no other lesion, the large intestine, the stomach, the liver, and the spleen, were carefully examined, but with a negative result. The abdominal cavity was washed out with warm saline solution, glass drainage was introduced into the pelvis, and the wound closed. Recovery was uninterrupted.

L. C., male, an Italian, aged thirty-five years, was admitted to the German Hospital with a history of a fall of about 50 feet, striking upon his abdomen. He was profoundly shocked and exsanguinated. The only external evidences of injury were some slight cuts on the hands and head. A diagnosis of internal hemorrhage was made, and the abdominal cavity was opened. Dark liquid blood escaped as soon as the peritoneum was opened, and the source was found to be the mesenteric vessels. The mesentery was torn half-way across, and the intestines were lacerated in four places. The mesentery was united by a series of catgut ligatures, and the rents in the intestines were closed with Lembert sutures. The abdominal cavity was washed out with hot saline solution and closed. The man died two hours after the operation. The autopsy demonstrated several tears in the gut which had been overlooked, and several grapeskins and pieces of figs in the peritoneal cavity.

M. E., twenty-four years of age, a nurse, was admitted to the German Hospital, January 20, 1893. While lifting a heavy weight from an elevator she felt something give away in her abdomen. This was immediately followed by severe lancinating pain in the right ovarian region. She was menstruating at the time. Pelvic peritonitis promptly set in. An examination demonstrated a tumor in the right broad ligament about the size of a hen's egg. The peritonitis and tumor subsided under treatment, and she made a slow recovery. Diagnosis: Pelvic hematocele from rupture of an engorged ovarian vein.

The most common form of intra-abdominal hemorrhage is that resulting from ruptured extra-uterine pregnancy. While these cases may be due to traumatism without any external evidence, they are usually spontaneous. While hemorrhage from the pelvic organs of the female usually occurs from a ruptured extra-uterine gestation-sac, it may be due to other non-traumatic causes. Hematosalpinx may occur independently of pregnancy, and rupture either spontaneously or from traumatism. Again, degenerated bloodvessel-walls, and especially veins, may rupture under similar circumstances. Hemorrhage itself is seldom the cause of death, but, associated as it is with shock, the degree of which is out of all proportion to the severity of the accident, it is frequently fatal in a very short time. When the peritoneum is wounded, shock is still more profound, and is of the type known as peritoneal shock. Hemorrhage within the peritoneum is sometimes very slight, and distinctly localized, and may occur several times during the course of the illness. It may take place between the layers of the broad ligament, and soon stop from the pressure.

I report the following two cases of hemorrhage from my list of operations for ruptured extra-uterine gestation-sacs, as they illustrate so typically the wisdom of immediate operation:

Mrs. A. K., aged thirty-one years, was admitted to the German Hospital, September 21, 1894, with the following history: For six months prior to admission she had been subject to attacks of vertigo, pain in the back and limbs, and for six weeks there had been a constant bloody vaginal discharge. Examination revealed a retroflexed uterus, with a slight tear of the cervix, and the presence of a small movable mass behind and to the left of the uterus.

On September 25th, four days after admission, the patient was etherized, and the uterus was dilated and curetted. After the operation the discharge stopped, but the patient gained strength very slowly. She was advised to submit to abdominal section, but preferred to wait until she was stronger. On the night of November 22d she awoke with a severe pain in the right side, and on attempting to walk to the water-closet fainted. After returning to bed she again fainted, and went into collapse, the pulse becoming almost imperceptible, and the temperature falling to 96°. Under active stimulation she reacted. The diagnosis was made of internal hemorrhage from rupture of a probable extra-uterine gestation-sac.

The abdominal cavity was found filled with fluid blood and clots, and the right tube ruptured. The tube was ligated, and the abdominal cavity flushed with hot saline solution, a glass drainage-tube introduced, and the wound closed. The patient was not much shocked by the operation, but on the contrary seemed rather improved. The drainage-tube was removed on the third day; the wound healed by first intention; and the patient made a good recovery.

Mrs. J. W., aged thirty-six years, was admitted to the German Hospital, November 21, 1894, with the following history: About 2 o'clock on the morning of admission she was seized with violent pain in the lower abdomen. For this she took some whiskey, and was somewhat relieved. At 9 o'clock the same morning she started for market, and was suddenly taken sick, becoming very weak, and suffering from violent pain in the abdomen. She returned home with difficulty, and summoned Dr. Hand, who advised immediate removal to the hospital. At the time of admission she was very weak, and there was distinct tenderness over the abdomen, with slight dulness on the right side. Immediate operation was advised and assented to. When the peritoneal cavity was opened it was found to contain fluid blood and clots. The right tube was the site of a small rupture, and was ligated and removed. The abdominal cavity was washed out with hot saline solution, glass drainage-tube was introduced, and the wound closed. The patient was very much shocked by the operation and reacted slowly. During the operation hypodermoclysis was practised. The drainage-tube was removed on the fourth day; the wound healed by first intention; and the patient was discharged, well, on the twenty-third day.

The following case of hemorrhage from ruptured extra-uterine gestation-sac illustrates the danger of delay as strongly as do the two previous cases the efficacy of prompt interference:

Mrs. P., aged thirty years, was the patient of Dr. S. Cooke Ingraham, of Wissahickon, this city, who furnished the following history:

I first saw the patient on January 29, 1892. She complained of severe abdominal pains of a bearing-down character, and of a sense of fulness in the epigastric region. She had been married seven years, but had never been pregnant, and laughed at the possibility. For the past three years the menstrual flow had been decreasing in amount, and for several months past had been very scant. The breasts were slightly enlarged, but the areolæ were not darkened. The glands of Montgomery were a little more prominent than normal. She had suffered from morning vomiting for the past month.

I was hastily summoned to see the patient on the morning of February 2d, and found her in a state of collapse, pulseless, and with a temperature of 96.5°. She reacted to active stimulation, and was sent to the German Hospital for immediate operation, a diagnosis of ruptured extra-uterine gestation-sac of the tubal variety having been made. Upon admission her pulse and temperature were normal. She did not complain of pain. Examination through the abdomen and by the vagina and rectum failed to reveal any mass, although a circumscribed area of flatness could be demonstrated low down and to the right side. She continued in this condition until February 12th, when, at her own request, she was discharged. On February 23d she was readmitted at Dr. Ingraham's earnest request. At the time of the second admission the abdomen was markedly distended, being tympanitic above and flat below, the pulse 116, temperature 101.5°. The woman complained of considerable pain.

The following day she was operated upon, and when the peritoneum was opened a fetus with clots and fresh blood gushed out. The ruptured sac occupied the right iliac region, and was tightly adherent to the neighboring coils of small intestine, to the cecum, and to the vermiform appendix. After a prolonged and tedious dissection the sac was enucleated. This was accompanied by very free bleeding, which necessitated packing of the cavity with gauze. The wound was closed with the gauze packing *in situ*. The patient died the following day of hemorrhage.

The immediate effects of an injury severe enough to cause a serious lesion of an abdominal viscus are sometimes so slight as to be misleading. Very often a patient with such a condition will walk to a conveyance or to the hospital, complaining only of a slight pain. In varying periods of time following the injury more decided symptoms will develop, viz., signs of hemorrhage if the solid organs be involved, and early peritonitis if the hollow viscera be ruptured or torn sufficiently to allow their contents to escape. When this occurs operation is imperatively demanded without delay. This is also true of hemorrhage consequent upon the rupture of an extra-uterine gestation-sac, be it traumatic or spontaneous. In ectopic gestation operation will be necessary in every case at some period in its history; therefore, if a diagnosis can be made or if even a well-founded suspicion of the condition exists, rupture should not be allowed to occur. If rupture does occur, however, immediate operative intervention is the only certain means of saving the patient's life. The longer the operation is deferred the greater the risk to life. Hasty operations, often necessitated by the patient's condition, are likewise less liable to reach a favorable termination. Blood-clots or intestinal or gastric contents cannot be washed out of the peritoneal cavity except by prolonged and repeated flushing.

The almost universal fatality of intra-abdominal lesions of traumatic origin is so well recognized that it seems as if there could hardly be any question as to the wisdom of opening the abdominal cavity. I would not be understood as meaning that abdominal section should be resorted to as a means of diagnosis; on the contrary, I believe that every known means, with attention to the most minute details, should be exhausted in establishing a diagnosis. When a diagnosis is impossible, abdominal section is justifiable only when it becomes the last and only chance for the patient.

I have refrained from using the terms exploratory and diagnostic incisions, believing that they not infrequently serve as a shield to cover a lack of diagnostic ability. It is a moral obligation resting upon every physician and surgeon to develop to the utmost of his ability the highest diagnostic attainments.

Aseptic surgery has undoubtedly been one of the greatest boons to humanity that the nineteenth century has brought forth. But to me it seems that it affords a great temptation to men who have not had experience and surgical training, and who have, therefore, not fully developed their diagnostic skill, to perform operations which are not necessary for the patients' good or with scientific precision.

CLINICAL LECTURE.

A CASE OF MYCOTIC ENDOCARDITIS.

By JAMES TYSON, M.D.,
PROFESSOR OF CLINICAL MEDICINE IN THE UNIVERSITY OF PENNSYLVANIA.

Gentlemen: The patient whom I present to-day is one of a class which unfortunately, often necessarily through difficulty of diagnosis, is recognized for the first time on the necropsy table. It is the case of a young girl, aged seventeen when first admitted to the hospital, December 7, 1893. She was born in Pennsylvania, and had been living at service previous to admission. Her family history is negative.

She has had the usual diseases of childhood, and when about eight years old had inflammatory rheumatism, and from that time has never been perfectly well. She says that every winter since she has had a return of rheumatism, and has been treated for heart-trouble more or less ever since her first attack. In the winter of 1892–93, after recovering from an attack of rheumatism and returning to work, she found that she had loss of power in the left arm and leg. On admission she complained of shortness of breath and a sense of tightness across the chest. She could not sleep lying down, because of palpitation and a feeling of suffocation. There was no edema of the feet or legs. There was evident loss of power in the left arm and leg, but sensation was unimpaired.

On physical examination, inspection noted a diffuse impulse in the neighborhood of the sixth interspace in the left mid-clavicular line; also a marked pulsation in the suprasternal notch. To palpation the apex-beat was found in the sixth interspace in the mid-clavicular line, strong and forcible, felt as far around as the anterior fold of the axilla. The impulse seen in the suprasternal notch was forcible to palpation, and a feeble thrill was felt at about the second interspace on the left side, and in the supra-sternal notch.

Percussion elicited relative dulness to the left of the sternum above the second cartilage as far as the parasternal line, and was succeeded by positive dulness at the third rib. The right border of the heart was found at the right edge of the sternum. Over the sternal region there was dulness from the second rib downward. Auscultation recognized a loud, rough steamtug murmur, loudest at the second interspace on the right side, the systolic element conducted into the neck, both murmurs downward along the left of the sternum, the diastolic louder, and toward the apex. Both were, however, lost before the apex was reached, while at the apex itself appeared a loud systolic murmur, conducted very strongly into the axilla, and heard also at the angle of the scapula.

The pulse on admission was 90; respirations, 25; temperature, 99° F., essentially normal. The urine-examination found the specific gravity 1030; reaction acid; albumin, a small amount, but no tube-casts.

On further examination of the left arm and leg there was found to be no atrophy, and when asked to describe the condition herself the patient said: "When the left leg is drawn up it seems heavy; the same is true of the left arm." Moreover, she could not raise her left arm to comb her hair. When she walked the left toe continued to touch the ground after it should have been above it. The loss of power followed an attack of rheumatism, during which she was confined to bed. She had been working, however, over a month after the attack before she noticed the loss of power, and while she seems to think it came on gradually, it is more than likely that it was sudden. The tendon-reflexes show marked increase, on the left more than on the right; and the slightest tap upon the radius or ulna produced intense reaction. There was, however, no ankle-clonus. She remained in the hospital until about the first of June, improving slowly, but always very nervous, excitable, and restless. Pulse-tracings made at different times during her residence in the house furnish typical tracings of aortic regurgitation. The diagnosis was aortic stenosis with regurgitation. Her temperature throughout her stay was normal, except for temporary and explainable causes.

She was readmitted on the 11th of October, 1894, with a report that she had been miserable all summer, and gradually getting weaker. About three weeks before admission she commenced to have chills, followed by fever and sweats. This occurred every day, the chill beginning in the afternoon; the fever reaching its acme in the evening. In the morning she sometimes felt warm, and was always very short of breath. She said her legs had been more or less swollen all summer, the left more than the right; that she had more or less rheumatism, which also seems to have been worse on the left side. Her left arm was still almost useless, and she complained much of pain in her left thigh and ankle. There was also great shortness of breath.

Blood-examination showed hemoglobin 45 per cent.; corpuscles, 2,880,000 in each cubic millimeter.

On the day of her readmission, October 11th, at 3 P.M., her temperature was 105.6°; her respirations, 32; her pulse, 120. At 8 P.M. of the same evening, her temperature was 97.6°; her respirations, 24; and her pulse, 74. At 4 A.M. the next day her temperature was 102°, and fell by 8 A.M. to 99.4°. A similar rise occurred at 8 P.M. of the 12th, followed by a fall to 99.6° by 4 A.M. the next morning.

Reëxamination of her heart recognized very much the same condition of physical signs as at her discharge, except that there was further enlargement to the right, and a double mitral murmur instead of the single murmur in the mitral area present at her first admission. Thus the signs now pointed to double mitral disease, as well as double aortic disease.

This extraordinary history of daily chill, fever, and sweats, with the signs of valvular disease, at once suggested the possibility of malignant endocarditis, and we sought at once to eliminate other possible causes of symptoms so marked and striking. Accordingly, her blood was exhaustively examined by Dr. Daland and ourselves without finding any malarial organisms. She was at the same time placed upon full doses of quinin, twenty grains a day, for a number of days in succession, without producing any effect upon the chills and fever. These continued daily, and there would be at times two periods of acme in the twenty-four hours, with this further feature that the maximum might be noted at four o'clock A.M. one day, and again at four o'clock P.M. the same day, with an intervening fall. Still, on the whole, it seemed that the highest temperature was reached more frequently during the latter part of the day. At this time, also, her blood was examined microscopically by Dr. Abbott and Dr. Ravenel, of the Laboratory of Hygiene, for micrococci, with negative results, while cultures also made at the same time remained sterile.

Reëxamination of the chest, on the 25th of October, 1894, noted a decided dulness from the ninth interspace downward to the edge of the thorax and below posteriorly to the spinal column, and anteriorly to the mid-clavicular line. There was also absence of breath-sounds in the same locality, and an absence of vocal fremitus; though it was noted, also, that there was little or no fremitus on the opposite side. With a view to determining whether this dulness was due to an enlarged spleen or a pleuritic effusion, a small trocar and canula of an aspirating apparatus were introduced a few days later in the ninth interspace just within the line of the angle of the scapula, with negative results. We concluded, therefore, that the enlargement was splenic, and probably due to embolism.

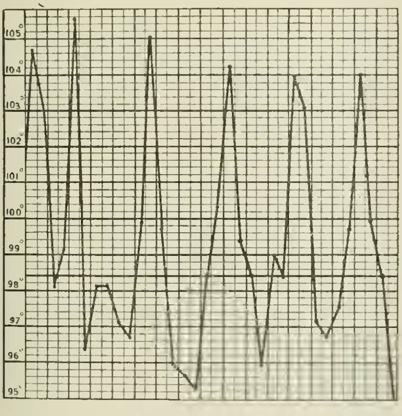
The patient's strength is rapidly succumbing to the exhaustive effects of the fever and the virulence of the poison. She is growing rapidly weaker, is anemic, almost bloodless in appearance, while the temperature-range has become even more marked and astounding, as revealed by the appended drawing of the temperature-chart.

It will be observed, for example, that at 10 P.M. of the 8th of November the temperature reached 105.4°, while by 4 A.M. the next morning it had fallen as low as 96.2°, a drop of 9.2°. By 6 P.M. it had again risen to 105°, followed by a fall to 95.2° at 4 A.M., or 9° in ten hours.

On the next day after the exploratory tapping there was a sharp pain in the abdomen, succeeded by diarrhea, which we suspected to be the result of another embolus lodged in some one of the intestinal bloodvessels, contributing, perhaps, to the extraordinary increase of the range of temperature noted.

For some days previously to November 13th there had been a small amount of albumin in the patient's urine and a few pale granular tube-casts. On this day, however, the albumin was found to be decidedly increased, and there were found in the urine numerous blood-discs and blood-casts, as well as pale granular casts. This was regarded as an indication that another infectious embolus had been shot off from the cardiac valves, and lodged this time in her kidney.

On the morning of November 14th, at seven o'clock, she called the nurse, and said that she could not move her right arm, and a few minutes later that she could not move her right leg; in a word, she was hemiplegic on the right side, the opposite of the primary attack of hemiplegia already noted as occurring previously to her first admission to the hospital. She remained conscious, and in the course of two hours there was complete return of motor power on the right side. The embolus was evidently small, and obliterated a vessel of corresponding size, whence the circulation was speedily reëstablished, and the hemiplegia was but transitory, while consciousness was not at all interfered with.



On the morning of the 15th two additional conditions presented themselves, also of great interest and importance. On her right hip was a large red blotch, nearly circular, two inches by two-and-a-half in diameter, evidently the seat of a blood-extravasation. Directly over the sacrum was another spot of the same size and character. This had occurred during the night, as at bedtime her skin was pure white and without a suggestion of discoloration. Evidently two emboli had been lodged in a bloodvessel of the skin, and the embolism was followed by the extravasation of blood beyond, constituting the well-known hemorrhagic infarct. During the next night another occurred in the same vicinity.

This history, including the chills, the marvellous temperature, the sweats, the signs of embolism in the brain, spleen, bowels, kidney, and skin, the rapidly growing anemia and general failure of health, in association with the signs of disease of both valves, admitted of but one conclusion, that the patient had mycotic or ulcerative endocarditis.

What, then, is mycotic endocarditis? It may be defined as an acute infectious fever due to invasion of the blood by a micro-organism and characterized anatomically by inflammation of the endocardium excited by the same organism. The disease itself has not been very long separated from others of like symptoms, except so far as the malignant nature is concerned. It was recognized as a separate form of disease, however, in 1851, by Senhouse Kirkes, though its mycotic nature was not discovered until comparatively recently, since Koch made his extraordinary discovery of the bacillus of tuberculosis.

I prefer the term mycotic endocarditis to any of the somewhat numerous others suggested, including ulcerative endocarditis, malignant endocarditis, infectious and diphtheric endocarditis, because it indicates the origin and nature of the disease better than any other, though the term malignant endocarditis, preferred by many, certainly gives a more accurate picture of the chief clinical features of the disease.

In the present instance the diagnosis is comparatively easy, because we have the history of a previous chronic endocarditis; and given such an endocarditis, with the supervention of the symptoms described and the elimination of a possible malarial cause, the diagnosis is at once apparent. The aid furnished by the preëxisting cardiac disease is not, however, always present. In a few instances the disease originates *de novo*, without the discovery of a previous cause or concurrent disease, constituting thus a true primary mycotic endocarditis. Fortunately, in the majority of cases, there is a concurrent infectious disease, which probably furnishes the infecting bacterium. Of such diseases pneumonia is the most frequent. The disease occurs also in association with gonorrhea, rheumatism, pleurisy, puerperal fever, bone-necrosis, and septicemia from any cause. More rarely it has been found in connection with meningitis, small-pox, diphtheria, scarlet fever, tuberculosis, and dysentery. The micro-organism that is directly responsible for the disease is usually that of the infectious disease responsible for the endocarditis. Most frequently, perhaps, it is the lancet-shaped bacillus of pneumonia, after this pus-organisms, the streptococcus and staphylococcus.

As to the acute cardiac lesions associated we find, in addition to the old sclerosis, three sets—vegetative, ulcerative, and suppurative. The vegetative are for the most part made up of closely packed spherical micrococci more or less commingled with small fibrin-masses. The vegetations vary in size from that of a pin's head to a pea, and are reddish-yellow in color. The seat of this vegetation becomes rapidly necrotic and breaks down into an ulcer which may perforate the valve, with or without previous protrusion, constituting in the latter event the so-called valvular aneurysm. More rarely minute foci of pus are found in the deeper tissues of the valve-leaflets. The invasion is, however, not always confined to the valves of the heart, but may extend to the mural endocardium. Of the valves the mitral is most frequently involved; next the aortic; next both mitral and aortic jointly; next the lining of the heart-wall; next the tricuspid, and last the pulmonary valve. In a few instances the right heart alone is invaded. Other morbid changes include the lesions of the concurrent affection and the phenomena of embolism due to lodgment of fragments of vegetation. The resultant when complete is a metastatic abscess, though the earlier stages of red infarction may also be present. On the other hand, embolism is not invariable. It may be totally absent.

In this particular case we have had, however, a number of embolic lodgments, the first being that noted as occurring before admission and before the endocarditis had become malignant. You will remember that a part of the symptomatology narrated was, in addition to the left hemiplegia, a decided increase in the tendon-reflexes. We may pause for a moment, with advantage, to consider the explanation of this interesting phenomenon. The lodgment referred to evidently took place in the cortical motor area, in which is also seated an inhibitory control over the tendon and muscle reflexes, by means of which they are kept within bounds. The effect of the lesion was to destroy this inhibition, and the reins were, so to speak, let loose upon the reflexes, which became unmanageable and were increased to such degree that the slightest tap on the radius or ulna caused a very prompt flexion of the forearm on the arm or the periosteal reflex.

Of the embolisms which occurred subsequently to the invasion of the malignant form of endocarditis upon the simple form, the first we could definitely locate occurred in the spleen, resulting in the enlargement and tenderness already noted as present. A day or two later the event of a sharp abdominal pain, followed very closely by diarrhea, led us to believe that there was embolism of one of the intestinal bloodvessels. Next came the embolism of the kidney, as the result of which there appeared in the urine an increased amount of albumin, blood-corpuscles, and blood-casts, without, however, pain, which sometimes occurs in connection with renal embolism. Then we had the second cerebral embolism, slight in degree and temporary in the duration of its effects, occurring on the morning of the 14th; and finally the cutaneous embolisms just described as having happened some time during the night of the 14th and 15th.

In addition to these seats of embolic lodgment we may have also embolism and hemorrhagic infarct occurring in the lungs from emboli starting in the right heart, while those starting from the left heart are found in the systemic organs. The number of embolisms varies greatly in these cases. It has been already said that they may be altogether absent, while they may be counted by hundreds, in which event they are, of course, very small.

It is not often that we have so strikingly present the symptoms of ulcerative endocarditis shown by this case, and which make the diagnosis in this instance comparatively easy. It will be remembered that we had here a primary chronic valvular heart-disease, which at once suggests the invasion of the malignant form, if the chill and fever so irregular in type are added. Given, however, a pneumonia, a pleurisy, the puerperal process, and the supervention of a similar set of symptoms, this form of heart-disease should be immediately thought of and the heart carefully examined for the auscultatory signs of endocarditis. In the primary forms, though rare, we have not even the presence of one of the diseases named to suggest the occurrence of ulcerative endocarditis. Here the resemblance to intermittent fever is even more close, but a careful study of the temperature-chart from day to day, and above all the utter failure of the antiperiodic remedy to produce any effect, will in a short time show that the malarial disease is not present. I do not doubt, however, that very many times has the malady under consideration been mistaken for intermittent fever, and with reason, for many a case of irregular quotidian and tertian fever presents symptoms not more diagnostic. It always greatly aids the diagnosis when to these are added other symptoms suggesting the embolism which so frequently occurs. And the occurrence of a hemiplegia or pain in the region of the spleen, with increased dulness on percussion, or pain in the region of the kidney, with hematuria, or a sudden blotch in the skin of the kind described, is of inestimable importance in aiding the diagnosis. More rare symptoms of similar origin are impaired vision from retinal hemorrhage, parotiditis, and abscess of the parotid gland.

A further study of the symptoms of malignant endocarditis permits their classification into four groups, known as the *septic*, the *typhoid*, the *cardiac*, and the *cerebral*.

The *septic* type occurs in connection with septic processes, an external wound, the puerperal process, or acute bone-disease with necrosis. The symptoms added are rigors, irregular fevers, and sweats. Yet these are only the symptoms characteristic of pyemia. In fact, it is a pyemia; and the term arterial pyemia, suggested by Wilkes, is a good one, because the pyemic abscesses are the result of embolism, whose emboli start in the left heart and lodge in the arteries. The presence of the endocarditis constitutes a distinct feature of the disease, but its symptoms may be masked, though careful examination of the heart will generally furnish its signs. The resemblance to intermittent fever here exists also, and a quotidian or double tertian type may be simulated, or the symptoms may develop in persons with chronic heart-disease without external symptoms.

The symptoms of the *typhoid* type are even more characteristic. There are here too the same prostration, irregular temperature, and sweating; but rigors are less frequent, while the onset is more gradual. There are delirium, drowsiness, often looseness of the bowels, with distention of the abdomen and tenderness in the right iliac region, to which also a rash may be added, which, though not identical with that of typhoid fever, is nevertheless similar to it. The tongue is dry and brown, and sordes collects about the teeth. The temperature is remittent, like that of typhoid, reaching 103° and 104° F., and even higher. Here again the heart-symptoms may be overlooked.

In the *cardiac* type are included those cases in which there has been chronic valvular disease, on which has supervened fever, with rigors and sweats, and the symptoms of embolism described as having occurred in the present case.

The symptoms are not always as pointed as detailed, while they may include others not mentioned. The fever may not be as high, but it is always present; again, it may not be remittent, but continuous. There may be jaundice, precordial oppression, shortness of breath, while heart-symptoms may be altogether absent, when it is almost impossible to make the diagnosis or to distinguish the disease from a septic fever of the ordinary kind. The pulse and respirations are invariably accelerated. Albuminuria and casts occur in all forms, either as the result of acute nephritis or of renal embolism.

If there is anything peculiar about the physical signs, it is their want of definiteness. When murmurs are present it is often difficult to locate or time them precisely. They often vary from day to day. They may occur at both base and apex, and with reason, for both sets of valves may be and often are involved. The super-addition of pericarditis adds a further source of confusion in the friction-sound superadded.

Still another group is the *cerebral*, in which the symptoms simulate meningitis, basilar or cerebro-spinal, and acute delirium may be present, in marked contrast to the mental state of our patient, whose mind is very clear.

As to complications, these are mainly the original cardiac disease and the diseases that most frequently cause the mycotic inflammation. Pericarditis and pleurisy are frequent complications in the strict sense of the term. So is meningitis. Acute nephritis, the result of the poison of the microbe circulating in the blood and independent of embolism may be present, with all the characteristic symptoms, blood-casts, free blood-corpuscles, and pronounced albuminuria. Gastro-intestinal derangements are sometimes conspicuous when not of embolic origin. Diarrhea was especially troublesome in our patient.

The *diagnosis* is easy only in the cardiac group. A few days' study of the temperature, with its extreme fluctuations, the rigors and supervening sweats, should at once lead to suspicion, and these, if continued, mean only one thing. The other forms are not so easily recognized; but if one would always remember the possibility of the occurrence of malignant endocarditis in connection with the diseases named, it would be less frequently overlooked. The presence of concurrent disease should guard us against the conclusion that there is typhoid or rheumatic fever. Septic fever is essentially the same in all cases, the heart-symptoms adding the only peculiarity. In true typhoid fever there is always splenic enlargement and often parotiditis, so that the presence of these symptoms naturally suggests that disease, and an erroneous diagnosis is not inexcusable. It is said that splenic enlargement is not so marked as in typhoid fever, but in my experience it is quite as conspicuous, but there is commonly more tenderness in mycotic endocarditis. Rheumatic fever often more closely resembles malignant endocarditis, with its high irregular fever and copious sweats, while confusion is further contributed to by the fact that endocarditis is one of rheumatism's most frequent complications, the mycotic form being a possible though a rare instance. The joint-symptoms of rheumatism are, however, more conspicuous at an early stage of the disease, and recurring rigors are not usual in rheumatism; but there is no enlargement of the spleen, nor are there symptoms ascribable to embolism unless secondary to endocarditis. The ultimate failure of remedies in the malignant form settles the question. The essential identity of ordinary pyemia and malignant endocarditis has been mentioned, and only the endocarditis and its consequences, which make it different from ordinary septic fever, can suggest the true nature of the sepsis.

The prognosis is always unfavorable, though the disease may be prolonged for many weeks and even months. Usually, however, five or six cover its course, while some cases are of shorter duration. Eberth reports one fatal in two days.

Treatment unfortunately avails little. The patient should be kept at rest. Remedies should be restorative and supporting—quinin, stimulants, digitalis. Nourishing food is indicated. The high temperature may be treated by sponging or by an ice-cap or by Leiter's coils applied to the thorax or abdomen; but it is seldom of so long duration as to require special treatment.

AUTOPSY AND COMMENTS THEREON.

A few days after the foregoing lecture was delivered the patient died, and an autopsy was secured. The diagnosis was fully confirmed in the finding of a greatly hypertrophied heart, whose valves, both aortic and mitral, were richly beset with characteristic vegetations, the aortic lunulæ being further eroded to nearly half their extent. The kidney and spleen, on the other hand, presented lesions which, while not identical with those foretold in the lecture, were still of a kind consistent with the primary conditions and most interesting and instructive. The kidneys, instead of being the seat of embolism as expected, because of the sudden hematuria, blood-casts, and increased albuminuria, were found to be the seat of a typical acute hemorrhagic nephritis, a frequent complication and the direct result of the action of the infectious organisms. The spleen contained four hemorrhagic infarcts; yet these were all old, being opaque, white, and much reduced in size, and could not, therefore, have been responsible for the acute enlargement of the spleen recognized before death and found at autopsy. The organ weighed 480 grams and presented on section an intensely bright-red surface on which stood out with distinctness the white dot-like Malpighian bodies, easily visible to the naked eye. The liver was much enlarged, weighing 1700 grams. The brain was not examined.

The Treatment of Diphtheria with the Antitoxin.—Soltmann (*Deutsche medicinische Wochenschrift*, 1895, No. 4, p. 53) reports that from April 1st to December 31st, 193 cases of diphtheria were treated in the Children's Hospital in Leipsic, with 50 deaths, a mortality of 27½ per cent. During the last five months of this period, when most of the children were treated with the antitoxic serum, there were 22 deaths among 122, a mortality of 18 per cent. Among those treated with the serum the mortality was 14.6 per cent., while among those treated with other measures the mortality was 27.2 per cent. In the first four months there were 28 deaths among 71 cases, a mortality of 39.8 per cent.

CLINICAL MEMORANDA.

HYDRO-PYONEPHROSIS:

Successful Removal of a Forty-Pound Tumor of the Kidney.[1]

By JOSEPH TABER JOHNSON, M.D.,
OF WASHINGTON, D. C.

In the latter part of last April I was called to see Gen. John B. C., of Missouri, in consultation with Drs. Peter and Sowers. The patient was found sitting in a large easy-chair, with a pulse of 120, a temperature of 102.5°, and an enormously distended abdomen. The man was sixty-three years of age and had inherited and possessed, until five years ago, a remarkably good constitution. He had been a General in the late war and had undergone much fatigue, exposure, and privation, having slept in swamps and lived at times on the shortest rations; his health, however, had remained good. For ten years after the war he was a member of Congress, and for six years clerk of the House of Representatives. He has since and does now occupy a prominent position under the government at Washington. About five years ago he first noticed evidence of failing health. A lump appeared in his right side in the region of the liver, and was supposed up to the date of the operation to be caused by enlargement and abscess of that organ.

The lump rapidly increased in size, and the patient gradually lost flesh and strength until the date of the operation, when he could not have weighed more than eighty pounds. At no time did he suffer from pain, and only a few weeks with fever. He was supposed at one time to have malaria, at another time inflammation of the liver, and later on the diagnosis was hepatic abscess, the tumor having acquired such dimensions as to make locomotion and the performance of official duties no longer endurable. The patient was tapped on the 3d of last April, and about four gallons of ascitic-looking fluid were drawn off. The last part of the fluid was stated to be brown or more chocolate-colored, and was said to contain pus. The tumor rapidly refilled and was tapped again in two weeks, when only one gallon of purulent-looking and bad-smelling fluid was drawn off. The abdomen was not much reduced in size at the second tapping, and a third attempt was made shortly after this, but the fluid was putrid and too thick to run through the canula.

About this time the patient began having irregular chills, sweats, rapid pulse, and high fever, and it was determined, if possible, that a radical operation should be performed. At this point in his history I was requested to see the patient. His urine had been examined several times. The report had always been the same, that, whatever disease he had, his kidneys were all right, nothing ever having been found during these five years to indicate kidney-trouble. The diagnosis in my mind lay between hydatid cyst of the liver and hydronephrosis.

The patient was taken to Providence Hospital, and was operated upon on the 9th of May last. A six-inch incision was made in the median line as in ovariotomy. The cyst was found closely adherent to the abdominal wall. It was punctured at the upper angle of the wound, and between four and five gallons of most offensive gray pus drawn off. So offensive was this fluid that some of the physicians present climbed up to the upper seats of the amphitheater and opened the windows. The cyst was thoroughly washed out with an antiseptic fluid before separating the adhesions. One plan had been to empty and disinfect the cyst and pack it full of iodoform-gauze. This was found to be impracticable, as it would have taken half a bushel to fill it. The only course left was to enlarge the incision and to enucleate the sac. When the adhesions had been sufficiently separated to pass the hand up to the liver, this organ was found to be perfectly healthy and in no way connected with the tumor. The origin of the growth was then traced back to the right kidney. The only choice left was a complete nephrectomy, which was accordingly done. Numerous adhesions were tied for fear of hemorrhage. The vessels in the pedicle were tied separately. The ureter was traced down very near the bladder and tied, cut, and dropped. The entire tumor, fluid and solid, weighed about fifty pounds. The abdominal cavity was then washed out and closed up in the usual way. A glass drainage-tube was left in. This was removed in twenty-four hours. The patient had a smooth and uneventful recovery. A curious feature about the case is the large amount of water from the remaining kidney. Thus on the first day were passed twenty-four ounces, on the third and fourth sixty-four ounces, and on the sixth day six quarts. Soon after this the quantity settled down to the normal, and has since remained so.

I saw the patient last week, and he reports himself as feeling better than he has for ten years. He has gained over sixty pounds in weight and is attending to his business without any difficulty.

There are several points of interest in this case, to wit: failure of a number of good men to make a diagnosis, though the patient was under observation for nearly five years; failure of repeated examinations of the urine to detect the slightest evidence of disease of the kidney (the only explanation that I have to suggest is that the disease at the time of analysis and subsequently had so destroyed the function of the kidney as to prevent the escape of any urine at all, and that the specimens examined all came from the other organ, which fortunately was healthy); failure of such large quantities of foul-smelling pus to produce more sepsis; absence all through the history of pain and fever; the median-line incision, the separate ligation of the renal vessels, and the ligation and dropping of the ureter.

I am aware that the lumbar incision is preferred by nearly all nephrectomists, and that they often bring out the cut end of the ureter and fasten it in the abdominal wound. While the lumbar incision may be best in small tumors and otherwise diseased kidneys, it certainly could not have succeeded in a case of the magnitude of the one just reported, not only on account of the great size of the tumor, but also because of its being so extensively adherent to the omentum and abdominal wall. The colon had to be carefully separated from the anterior surface of the tumor.

While this was a very large hydronephrosis, which after tapping became a pyonephrosis, it was not so large by twenty-five pounds as one I removed for Dr. Bedford Brown in Alexandria, Va., which was mistaken by us all for an ovarian tumor. In that case the tumor weighed seventy-four pounds.

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[1] Read before the Southern Surgical and Gynecological Association, November, 1894.

CASE OF SUPRA-SPINOUS DISLOCATION OF THE RIGHT SHOULDER, PRESUMABLY OCCURRING AT BIRTH.

By BERTHA LEWIS, M.D.,
INSTRUCTOR IN ORTHOPEDIC DEPARTMENT OF THE PHILADELPHIA POLYCLINIC AND COLLEGE FOR GRADUATES IN MEDICINE; CLINICIAN IN CHARGE OF ORTHOPEDIC DEPARTMENT OF THE WOMAN'S HOSPITAL.

In August, 1894, Joseph S., eleven months old, was brought to the Neurological Department of the Philadelphia Polyclinic, as the mother had been told her baby's right arm was paralyzed. A critical examination by Dr. J. W. McConnell and myself revealed the fact that there was no loss of power in any of the muscles of hand or forearm, but that there was fixation at the shoulder. The case was at once referred to the orthopedic department of the same hospital, when I again saw the case in conjunction with Dr. J. Torrance Rugh. The mother gave the following history:

The child was born September 23, 1893, the labor being long and difficult; the forceps was used to deliver the head of the child; delivery of the shoulders was delayed and difficult, force being again required, but the history is not clear whether the fingers or a hook was applied. When the child was born it was too badly bruised to admit of handling, and had to be rolled in cotton. On the second day the nurse called the doctor's attention to the limp condition of the right arm, but no attention was given to it, the mother says, further than to assure the family that "the arm would be all right in a short time, that it was a little injured from pressure."

Nothing was done until the end of the third week, at which time the family physician returned to the city, and the mother called his attention to the arm. He examined it and applied a bandage, placing the arm approximately in the Velpeau position. This treatment was continued for two months, at the end of which time the condition of the arm was not improved. The mother's anxiety was not allayed by the assurance that the arm would come right in time if she did nothing, and that only a nerve had been injured. The mistrust in this wise (?) counsel brought her to the neurological department as already stated.

Examination in the orthopedic department showed fixation at the right shoulder, the head of the humerus protruding above the spine of the scapula posterior to the acromion process and being firmly fixed in this position. The head and neck of the humerus could be clearly outlined, the muscles being very flaccid from lack of use. The marked anterior rotation of the humerus in its long axis produced an exaggerated pronation of the forearm and hand.

The child was put under ether for a more complete diagnosis and the reduction of the deformity, because of the limited motion and the long duration of the deformity. Firm fibrous ankylosis was anticipated, but when complete relaxation was obtained, and the scapula fixed, extension applied to the arm caused the head of the humerus to slip easily into the glenoid cavity. No adhesions had formed; rotation, adduction, abduction, all movements were free. Then came the problem of maintaining the correction, as we had to deal with abnormally contracted muscles and ligaments posteriorly, and the reverse or greatly relaxed muscles and ligaments anteriorly.

The unique method was suggested by Dr. Rugh, of applying a plaster-of-Paris bandage with the arm in position in which the deformity had been reduced—namely, that of extension laterally, the arm and forearm on a plane with the trunk and on a level with the shoulder. This was done; pressure was made in the plaster-of-Paris, while soft, at a point posterior to the acromion and below the spine of the scapula. The plaster-of-Paris bandage was carried to the wrist. This dressing was removed on the eighth day, when it was found that the head of the humerus had slipped a little posteriorly. The arm was then slightly over-extended posteriorly to the plane of the trunk, and a second plaster-of-Paris bandage was applied. In this, as in the first application, the bandage was carried around the trunk, over the shoulder, and down to the lower angle of the scapula, over the right arm to the wrist. The child was restless for the first two nights, but was quiet and comfortable afterward.

This treatment was continued for eight weeks, when the bandage was finally removed, and the arm maintained nearly a normal position. Owing to the long period of inactivity, for the part had never had any normal period, there is slight stiffness at the shoulder. Supination is difficult, and pronation is greatly exaggerated. Movements, with massage and electricity, have been used in the subsequent treatment. Passive movements in all normal directions, and massage of the muscles of the upper arm and shoulder, have been practised on each visit of the child to our clinic, and the mother has been instructed to practise massage daily.

This has been a very unusual as well as an interesting and instructive case. I have been unable to find any report of a case of supra-spinous dislocation occurring at birth. Most authorities claim that the supposed cases of dislocation have been fractures or separations of the epiphyses from the shaft of the humerus, but we are certain that we had a case of supra-spinous dislocation of the right humerus, as the head of the bone was distinctly outlined above the spine of the scapula, and had it been a fracture or an epiphyseal separation, reduction could not have been accomplished so easily and completely.

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CEREBRAL FUNGUS—EXCISION AND CAUTERIZATION OF PEDICLE—RECOVERY.

By HENRY M. KELLER, M.D.,
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SURGEON-IN-CHIEF AND SUPERINTENDENT OF THE HOSPITAL FOR INJURED PERSONS OF THE MIDDLE COAL-FIELDS OF PENNSYLVANIA.

Andrew W., aged twenty-eight years, was admitted to the hospital October 2, 1893, with a compound fracture of the frontal bone, immediately over the left frontal eminence. One week before admission he had been struck on the head with a beer-bottle. The physician in attendance had treated it as an open wound; no attempt had been made to elevate the depressed bone, and the wound was packed with lint. On admission the patient was perfectly conscious, the pulse 80 and full, the temperature 98.4°. An examination revealed a depressed fracture three-and-a-half inches long, by one inch wide; the wound was infected. The man was immediately prepared for operation, the trephine applied, and a large section of depressed bone removed. The dura was found torn and the brain-substance lacerated. Some lacerated brain-tissue was removed, the wound thoroughly cleansed and catgut drainage inserted. The patient reacted from the operation, and the following three days the temperature-range was between 98° and 100.4°. On the third day the dressings were removed and a small amount of pus was found. On the seventh day a rapidly growing fungus had torn out several stitches. The remaining stitches were now removed in order better to cleanse the pus-covered fungus. The growth had by this time attained the size of a small hen's egg. Compression by means of gauze-pledgets was now employed, and was kept up for twelve days, with no diminution in the size of fungus. The man became dull, had a vacant expression, would not talk to his friends, and on several occasions failed to recognize his brother. The temperature never rose above 100°, and the pulse was slow. Having failed to accomplish anything by compression, on October 21st, or the nineteenth day after his admission, he was placed under ether and the growth was cut off on a level with the skull. The pedicle, which was quite broad, owing to the large size of the fracture and loss of brain-substance, was cauterized with a Paquelin cautery; the wound was thoroughly cleansed and packed with iodoform-gauze and dressings were applied. After operation the temperature fell from 99.6° to 98°. The mental condition remained about the same for a period of a week or ten days, and then began to improve. The wound was repacked every second day until the discharge ceased; the edges of the scalp were then freshened and brought together, several strands of catgut being still used for drainage. A slow recovery followed, and on December 18th the man was discharged from the hospital, the wound having healed entirely and the mind being perfectly clear. This case is presented as being of interest merely from the fact that a complete cure was effected by excision of the growth and cauterizing of its pedicle.

PATHOLOGIC NOTE.

SOME NOTES ON THE USE OF FORMALIN AS A MORDANT IN ANILIN-STAINING.

BY A. P. OHLMACHER, M.D.,
OF CLEVELAND, OHIO.

THE idea of using formalin as a mordant in anilin-staining occurred to me quite by accident. Some tuberculous sputum for use in the laboratory-classes was procured two or three days before the exercise, and, with a view of preserving it and of destroying the vitality of the tubercle-bacilli, a plug of cotton was impregnated with a few drops of formalin and secured in the top of the tall, wide-mouthed, screw-cap jar containing the sputum. In this way the vapor of the formalin alone could penetrate the sputum. When this sputum was distributed for class use it was not visibly altered in appearance, although it smelled strongly of formalin. The cover-glass preparations, made in the usual way, were stained with Ziehl's carbol-fuchsin, and decolorized with a 25 per cent. sulphuric-acid solution containing 1 per cent. of methylene-blue (Gabbet's method). I was surprised to find, in the hands of all the members of the class, that the bleaching and counter-staining solution had utterly failed to decolorize the preparations in a few seconds, as is usually the case. A longer application of the decolorizing solution was advised, with no benefit. Thinking the decolorizing solution at fault, a fresh solution was prepared and distributed. Still the red color of the fuchsin persisted, even though the powerful decolorizing solution was allowed to remain five minutes in contact with the preparation. The preparations were mounted in despair and examined. It was found that the stain was retained by the pus-corpuscles, both in their nuclei and protoplasm, and by the tubercle-bacilli. The other bacteria and the mucus were stained with the blue. On the occasion of this laboratory-exercise the preliminary exposure of the sputum to formalin-vapor was quite forgotten, and I could not account for the strange behavior of the staining experiments. Pondering on the subject, the idea of the formalin being responsible for the trouble occurred, and with it the suggestion that, if the formalin was responsible, it was due to a very powerful mordanting effect of its vapor. Two samples of tuberculous sputum were now examined, one previously exposed to the vapor of formalin for twenty-four hours, the other not so treated. The same staining method as previously outlined was employed, and the formalin-sputum repeated in every way the peculiarity of the class-room sample, while the control-sample stained and decolorized in the usual manner. Thus the idea of using formalin as a mordant in anilin-staining was suggested, and experiments were at once set afoot. As my routine work at this time has to do with bacteria, most of my experiments with formalin have been made on this class of objects.

Formalin may be employed in bacteria-staining preceding one of the ordinary dyeing solutions, as, for example, carbol-fuchsin, anilin-water gentian-violet, and aqueous methyl-violet and aqueous methylene-blue. For this purpose a 2 per cent. or 4 per cent. aqueous solution of formalin is used. The fixed film of a cover-glass preparation is treated for one minute with the formalin-solution, washed with water, and stained one minute *in the cold*. Conducted in this manner the staining is much more intense than when the dyes are employed without the mordant; in fact, it is possible to stain in the cold with the aid of formalin and produce better effects than when heat is employed in the old way. The advantage of this feature is evident, for no one can deny that the heat employed in our routine bacteria-staining is a bad element.

Aside from its use as a mordant preceding other staining solutions, formalin may be employed as the base for staining solutions, just as anilin, carbolic acid, etc., are employed in the standard formulæ.

A formalin-fuchsin that appears to keep well may be made by adding 1 gram of fuchsin dissolved in 10 c.c. of absolute alcohol (*Fuchsin für Bacillenfärbung*, Grübler) to 100 c.c. of a 4 per cent. aqueous formalin-solution. This solution stains energetically in the cold.

Formalin-gentian-violet may be made by adding to a 4 per cent. aqueous formalin-solution a saturated alcoholic solution of gentian-violet (Grübler), in the same proportion as employed in making the Koch-Ehrlich anilin-water solution of this dye.

A formalin-methyl-violet is made like the gentian-violet solution, except that a saturated alcoholic solution of methyl-violet (*5* B., Grübler) is used.

Formalin-methylene-blue can be made by dissolving 1 gram of methylene-blue (*Methylen-blau nach Ehrlich*, Grübler) in 100 c.c. of a 4 per cent. aqueous formalin-solution. All of these solutions appear to be as permanent as the corresponding mixtures of other formulæ.

All of these mixtures are powerful stains for bacteria, even when employed without heat. It has not been possible as yet to devise specific stains for certain bacteria with the aid of formalin-solutions; but much may doubtless be accomplished in this direction. The few experiments that I have made in flagella-staining with formalin have been negative, though there is reason to hope that on account of its powerful mordanting action this agent may, with certain procedures, become a valuable aid in staining the motile appendages of bacteria. In spore-staining, also, the field for the employment of formalin is inviting.

In tissue-staining, for general or special purposes, the formalin-anilin solutions promise to be of great utility. The formalin-solutions of fuchsin, gentian-violet, methyl-violet, and methylene-blue may all be used in tissue-staining. Most of my experiments in tissue-staining have been confined to the formalin-methylene-blue solution (formula already given). Sections of anthrax rabbit tissue fixed in absolute alcohol, Carnoy's chloroform-acetic-alcohol, or Hermann's solution, and affixed to the slide by the water-albumin method, were stained half a minute with the formalin-blue, washed in absolute alcohol, cleared in xylol, and mounted in xylol-balsam. On account of the mordanting effect of the formalin, the methylene-blue remains in the tissue with great persistency, and there is no danger of washing it out with absolute alcohol, as is commonly the fault. These preparations exhibit a beautiful dark-blue and precise nuclear staining; the bacilli stand out sharply with a stain so intense as to appear almost black, and red blood-cells, when present, stain a curious yellowish hue. Karyokinetic nuclear figures in the splenic tissue were stained very prettily and sharply with the blue. This staining succeeded with the tissue fixed in the three different fixing solutions.

A curious effect was obtained when safranin (*O wasserlôslich*, Grübler) was dissolved to saturation (in the cold) in a 4 per cent. aqueous formalin-solution. The anilin-water solution of this dye is a powerful and precise nuclear stain when used by the indirect method of anilin-staining; but the formalin-solution proved to be a *plasmatic* stain, comporting itself in all essential particulars like eosin. A section of the kidney of the anthrax-rabbit, stained first with formalin-methylene-blue, and then with the formalin-safranin, gave a beautiful double stain. The protoplasm of the renal epithelium stained light-red; the chromatin nuclear framework a reddish-blue; the nucleoli a deep-blue; and the bacilli, in the glomeruli, were rendered very prominent by their heavy stain.

In connection with methylene-blue staining it is suggested to those particularly engaged in neurologic work that formalin may be found to be a mordant and preservative that will prove of great aid in fixing this ideal stain in the nervous elements, and in preserving these specimens.

From these observations, based on introductory experiments, it is evident that formalin promises to be a very valuable and widely useful agent in microtomy. A great many experiments with this new mordant will naturally suggest themselves to specialists in the various departments of microscopic laboratory-work.

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MEDICAL PROGRESS.

Castration for Prostatic Hypertrophy.—Swain (*British Medical Journal*, No. 1775, p. 12) has reported the case of a man, seventy-three years old, who for five years had suffered from difficulty in passing urine. During the greater part of this time he was compelled to use a catheter to empty the bladder. On several occasions he had received treatment for retention, and a number of times the urine had contained blood. Six weeks before coming under observation the man had suffered a "stroke," and subsequently the bladder-symptoms had been much aggravated. He was compelled to rise four times during the night to pass urine. There was considerable pain in the bladder, and the use of the catheter was constantly necessary.

The man came under observation for the relief of retention. A soft catheter was introduced, and the urine, which was decomposing and contained a large quantity of blood, was withdrawn. By rectal examination the prostate was found to be very hard and prominent, and about as large as an orange. It was impossible to touch the top of it with the finger. Subsequently the catheter could not be introduced, and the bladder was aspirated above the pubes. On the third day a metallic prostatic catheter was passed, which traversed the urethra for nine-and-a-half inches before the urine began to flow. The considerable depression of the handle that was necessary suggested that the middle lobe, as well as the lateral lobes, was much enlarged. For about ten days the bladder was irrigated night and morning with boric-acid solution, and, although the urine contained very little blood and was less fetid, the prostate did not diminish in size and the patient was gradually getting worse.

The kidneys were presumably healthy, as the total amount of urine excreted daily was about normal. Double castration was proposed and accepted. In consequence of the decomposition of the urine it was necessary to continue the irrigation of the bladder for three weeks after the operation, but on the seventh day the patient passed a small quantity of urine of his own accord, and this gradually increased in amount, so that when the washing out of the bladder was stopped he passed all his urine naturally. Coincidentally with this, his general condition improved and the prostate gradually became smaller. There was a perceptible diminution in the size of the gland at the end of the first week after the operation; but in the third, fourth, and fifth weeks the increasing atrophy appeared to progress more rapidly. In three weeks after the operation the patient began to get about, and in five weeks he was dismissed.

At this time his general condition had greatly improved. His urine was normal; he sometimes passed half a pint at a time, but he could not hold his water for more than four or five hours in the daytime. There was no residual urine in the bladder; the prostate was comparatively soft and about the size of a large horse-chestnut. If a catheter was introduced, it passed easily, and urine began to flow along it when a distance of eight inches from the orifice of the urethra had been reached and without any more depression of the handle than is usual. Thirteen weeks after the operation the patient had been able for eight weeks to dispense with the use of the catheter, and was not compelled to arise at night. He was free from all difficulty in emptying his bladder, and the urine was normal in appearance and odor. On rectal examination the prostate was found to be rather smaller and firmer than at the previous examination.

RICKETTS (*Medical Fortnightly*, vol. vii, No. 2, p. 33) has reported the case of a man, seventy-four years old, who was much distressed by greatly increased frequency of micturition, associated with great pain and disturbance of sleep. Attempts to introduce a catheter had been unsuccessful. After relief of the immediate symptoms, and keeping the patient under observation for ten days, bilateral orchectomy was performed. The patient bore the operation well, and suffered no inconvenience or pain thereafter. On the second day after the operation urination was easier and sleep was better. The patient was dismissed on the sixth day much improved.

Hypertrophic Macrochiria of the Right Arm.—CHASSIOTIS (*Monatshefte für Praktische Dermatologie*, vol. xix, No. 12, p. 674) has reported the case of a man, twenty-five years old, who came under observation on account of a deformity of the right upper extremity which had been present from birth. He related that he had been able to use the member until twenty years of age, particularly the fourth and the little fingers, which, though apparently atrophic, were of physiologic size and form. During an imprisonment for some transgression at this time he observed the right hand to become swollen, and from fear of an unfavorable result asked to have the member amputated. The right upper extremity had become so enlarged that, to maintain his equilibrium in standing, the patient was compelled to incline his head toward the left side.

The enlargement began anteriorly at the outer margin of the pectoralis major, above the acromion, posteriorly at the upper extremity of the outer margin of the axilla, and appeared to involve, down to the elbow-joint, only the anterior and external aspects. The tissues of the part were flabby. Sensibility was preserved. From the elbow-joint to the root of the hand the enlargement presented a certain degree of induration, though upon the inner side the muscles and bones were palpable. The hand retained somewhat the form of a normal member; the thumb and the index and ring fingers were enormously enlarged, and sensibility was lost upon the palmar aspect of their third phalanges. The skin of the palmar surface was hard and presented a peculiar rose tint. Upon examination of the amputated member the increase seemed to involve all of the constituent structures.

Removal of Partially Encysted Dumb-bell-shaped Calculus by Lithotomy.—At a recent meeting of the Philadelphia Academy of Surgery Dr. H. R. WHARTON reported the case of a child, five or six years of age, in which on examination a stone was found in the bladder. Some hesitation was for a time felt as to what operation should be performed. Litholapaxy was decided upon, but when the child was etherized there was felt on rectal examination a prolongation of the bladder into the rectum containing the stone. Lateral lithotomy was then undertaken, and after exposing the stone and attempting to grasp it, it was found impossible to remove it, as the posterior portion was thoroughly surrounded by the wall of the bladder. The stone was dissected out with the finger without breaking it. The patient did perfectly well after the operation.

THERAPEUTIC NOTES.

Sodium Fluorid for Tuberculosis in Infants.—As the result of a clinical study BOURGOIS (*Bulletin de l'Académie Royale de Médecine de Belgique*, 1894, No. 11, p. 874) arrives at the conclusion that sodium fluorid exercises a useful influence upon infants either predisposed to tuberculosis or already tuberculous. The good results obtained were permanent, and in several cases recovery had been maintained for several years. The doses employed varied from .0001 g. (gr. $\frac{1}{7}$) to .005 g. (gr. $\frac{3}{4}$) daily in fractional parts, and were proportionate to the chronicity of the disease. When the good effects of the treatment become apparent the dose may be reduced, and finally omitted, unless the amelioration does not continue, when the original dose should be resumed. No disadvantage was observed from the use of the drug, which appeared perfectly inoffensive, and was well borne.

The Treatment of Obstruction of the Bowel by Electricity.—ALTHAUS (*British Medical Journal*, No. 1778, p. 188) has reported the case of a man, fifty-four years old, who for three months had suffered with obstinate constipation. At the time of coming under observation the bowels had not been moved for ten days, and the abdomen was distended and tender. The appetite was lost, and a condition of collapse existed, with sunken face, and a small, feeble pulse. The introduction of a long tube proved unavailing, and electric treatment was resorted to. An insulated sound, with a free metallic end, was introduced into the rectum, and a moistened conductor applied to the abdominal parietes, chiefly in the region of the sigmoid flexure. Through this circuit a primary faradic current was passed, and its force gradually increased until the patient experienced a decided feeling of vibration in the bowel. In the course of the day a copious intestinal evacuation ensued, with wonderful relief to all of the symptoms. During the next two days the bowels acted ten times, and in the course of a week the patient appeared to be quite well. A second case, in a woman fifty-seven years old, is cited in which a like result was obtained from similar treatment.

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THE BRITISH TITLE "DOCTOR."

In Great Britain it is notorious that the people are somewhat of precisians in their methods of styling one another. There are definite laws regulating the procedure in addressing all the different grades in the peerage and hierarchy, while the titles appropriated to the members of the branches of the public service are very exact. It is, therefore, a little bewildering to our notions of uniformity to find that the rules according to which it is correct or incorrect to address a medical man as "Doctor" are by no means clear. We are talking of professional and scientific society, of course, and not of society at large, which, correctly or incorrectly, will always call the medical man "Dr.," without any intention to confer upon him an unearned university degree, but solely as a ready method of calling the attention of the company to his status or of singling him out for identification. And before laying down exactly who is and who is not in England entitled to prefix "Dr." to his name, we cannot refrain from pointing out the awkwardness of the fact that all medical men in the United Kingdom are not allowed by custom to call themselves "Dr." under all circumstances. It is inconvenient when a desire to be accurate entails the necessity of always alluding to any one member of the medical profession as a physician or surgeon, instead of being able to lump his titles under the generic term "Dr.," for the word "practitioner" does not cover the whole of the profession, but is restricted in its use for the designation of those in general practice in contradistinction to those whose work is purely consultant.

In Great Britain the only persons in the medical profession with a clear right to prefix "Dr." to their names are those holding the diploma of Doctor of Medicine in the Universities of England, Ireland, and Scotland; and these gentlemen for various reasons form but a small percentage of an overcrowded profession. The Universities of England, in order of seniority, which can confer the degree of Doctor of Medicine upon their medical graduates are Oxford, Cambridge, Durham, London, and Victoria; those of Ireland are Dublin and the Royal University; and those of Scotland are Edinburgh, St. Andrew's, Glasgow, and Aberdeen. The possessors of the degree of Doctor of Medicine obtained at any of these eleven universities have a clear and indisputable right to be styled "Dr.," and although, as we shall see, there are numerous circumstances that entitle others to use the same style, they must be held to do so rather by concessions of courtesy than by right.

The value of these eleven different diplomas, viewed from the point of the severity of the tests to which their holders have been exposed, varies infinitely; but indisputably the London degree is the hardest to acquire. Again, education at either of the two preëminently ancient seats of learning carries with it a certain social prestige. For these two reasons it is to be observed that the graduates of London, Cambridge, and Oxford generally add London, Cantab., or Oxon. to the M.D. affixed to their names. It is not, however, imperative in the Doctor of Medicine to signify the body which granted him his degree. It is purely a matter of individual choice and taste. To some it would appear that, for the very reason that certain degrees are harder to obtain than others, taste should impel the holders of the more readily won titles to confess their origins; but on this point there is no law. Nor could there very well be any law, unless definite conclusions could be arrived at as to which are the readily won titles, and any attempt to formulate conclusions on this point would inevitably cause much bad feeling, while the result would be entirely unconvincing.

Doctors of Medicine in the eleven universities have a clear right, and the only quite clear and indisputable right, to be officially styled "Dr."—of course, in their character of medical men—in Great Britain. In addition to the degrees conferred by these eleven universities there are gentlemen practising the medical profession in England who possess the degree of Doctor of Medicine from recognized foreign universities. These gentlemen would be entirely correctly addressed as "Dr." in professional circles. But it must be understood that to a certain degree such a method of addressing them is an act of courtesy, as their doctorates would not appear on the register of the General Medical Council of Education and Registration, the body which in Great Britain has the control of all these matters; and were they not otherwise qualified, that is, in possession of diplomas from some of the recognized licensing bodies of the United Kingdom, they could not practise their professions, save under the disabilities entailed by being absent from the register. It is unnecessary to go into more detail. We need only say that the number of foreign universities whose degree of Doctor of Medicine is recognized in the United Kingdom as a legal registerable title, and not as an appanage to other legal registerable titles, is now very small.

We now come to a very large class whose legal and moral title to the style of "Dr." has never been questioned, but who really have no right whatever to the style, and enjoy it solely by courtesy. These are the Bachelors of Medicine of the eleven universities already enumerated. It is not difficult to understand how this has come about. In some cases there is little but a question of fees between the Doctor of Medicine and the Bachelor, and it has then been generally felt that it would be a hardship to a young man to prevent him from enjoying a title which he has mentally earned until he could pecuniarily obtain it. Again, certain of the universities impose a not too brief term of years between the granting of the M.D. degree and the earning of the M.B. degree, and this period is one in which a young man making a start ought decidedly to be allowed to avail himself of every proper opportunity of letting his professional brethren and his future clients know his status in medicine. If he has the moral right at this time to call himself "Dr.," he ought to be allowed to do so. Sometimes there is an examination to be passed; generally this takes the form of a thesis or dissertation, though at London and Cambridge Universities there is a written examination. We have now exhausted the list of persons who have a right to be called "Dr.," having attempted to divide them into two classes, those with a legal right and those with a right by courtesy. But the broad question: Who do you call "Dr."? is not so easily settled, and any one who should be guided solely by the simple rules we have laid down would promptly find himself in error. To begin with, no pure surgeon in London, Edinburgh, Dublin, or the large provincial centers ever calls himself "Dr.," although he may have, and for that matter very generally does have, the qualifying right. In Great Britain the pure surgeon is always addressed as Mr. Thus we have Mr. Hulke, President of the Royal College of Surgeons, and M.D. Lond., but "Mr.," essentially "Mr.," as a pure consulting surgeon. In the provinces, on the other hand, it may be in quite large towns and in the centers of important populations, it will often occur that the pure surgeon, so far as his line of practice goes, will elect to be called "Dr.," if he possesses the right to the title. That is to say, he will decide upon using the exactly opposite style to that affected by his metropolitan brethren. This may be for various reasons; the usual one is that as a young man he was known as "Dr." to the countryside. It was as "Dr." that he made his reputation and obtained his practice and the position that enabled him to leave general practice, and so, when deciding to confine his work to purely operative surgery, he very naturally leans to his old title, which has hitherto stood him in good stead. As germane to this point, we may refer to the position of the obstetric physician, who is certainly and largely an abdominal surgeon. These gentlemen prefer to style themselves "Dr.," and in some cases do not possess any particularly good surgical diploma; yet much of their work is purely surgical, and could be no more dependent upon medical erudition and tact than that of the general operating surgeon. So much for persons who can be styled "Dr.," but prefer to be addressed as "Mr.," and persons whose work should really mark them off as more fitted for the purely surgical style of "Mr.," but who like to call themselves "Dr."

We now come to a class who are very usually styled "Dr.," and have, from a professional point of view, no right whatever to the title. These are the gentlemen whose professional title would only earn them the appellation of "Mr.," but who possess, in addition, a degree entitling them to style themselves Doctor of something else other than medicine. There are on the *British Register* persons holding nearly every sort of title which can give the right to assume the prefix of Doctor. There are not many Doctors of Divinity, but there is at least one, and he is a bishop. There are many more medical men in Great Britain who have the title Doctor of Laws, and now that the impulse given to State medicine is so very great there, it has become comparatively common for medical men to be called, in addition to their profession of medicine, to the bar, a proceeding that we may expect to see result in the title of Doctor of Laws being united still more frequently with medical degrees; but it must be remembered that it is not a common title, and that the bodies granting it are few in number. The recognized method in all the universities of Great Britain of honoring a man is to confer a degree upon him, and it so happens that those degrees are nearly always such as would entitle a man to style himself "Doctor," generally Doctor of Letters, and a good example of the pitfalls into which the uninstructed might fall will be furnished by mentioning one or two names. MR. HUTCHINSON, for instance, remains "MR." HUTCHINSON, because he is a pure surgeon; but he holds the degree of LL.D. Cantab., conferred upon upon him as a recognition of his distinguished services to science. He is "Dr.," undoubtedly "Dr.," and it is most undoubtedly incorrect to style him so. MR. ERNEST HART, again, as a member of the Royal College of Surgeons, is properly styled "Mr.," but he holds the honorary degree of D.C.L. Durham, in recognition of his position as editor of the official journal of the British Medical Association, which met at Newcastle (the seat of the Durham Medical School) in the year 1893. MR. HART is undoubtedly "DR." HART, but it is equally undoubtedly wrong to style him so.

It is a blessing for the precise man, the man who is uncomfortable unless he addresses people by their proper style, to remember that in Great Britain these honorary degrees are in most cases so rigidly reserved for the distinguished man that it is usual for their recipients to enjoy, either at the time of their creation or shortly afterward, some higher title in which, according to English etiquet, the minor question of "doctor" or no doctor is entirely merged. Either as knights or baronets the medical holders of honorary degrees generally settle the question of how they should be addressed by having the right to be termed Sir, as SIR JOSEPH LISTER, SIR WILLIAM JENNER, and the first and last of which, had they not been baronets, would have been good examples of individuals styled "Mr.," with the right to be styled "Dr." also.

We have now exhausted the list of those who, rightly or wrongly, by law, courtesy, or mistake, can by styled "Dr." in Great Britain *qua* medical man. We have not considered it worth while to count the names in the *British Medical Directory* with a view of ascertaining what proportion these three classes bear to the whole list; but it is safe to assert that it is a very small one. It is safe also to assert that the majority of medical men in Great Britain and Ireland have not, either by legal position or by etiquet, the right to style themselves "Dr." That they are very largely so called has nothing to do with the case. The title is purely colloquial, and used, as we have already indicated, for social purposes, to signal out its possessor and place him at once in his proper position in the company. The word "Doctor" in such a connection simply means "medical man," and is not intended to confer either a doctor's degree or university status upon its possessor. In precise writing the titles of "Dr." and "Mr." are rigidly allocated to their proper possessors, and as a rule the medical profession among themselves endeavor to observe this precision, and the man who is "Doctor" to the whole country-side will be "Mr." to his professional colleague, who knows his proper style; but even in professional circles we have noted one or two tendencies to condone a wrong use of title out of deference to the individual position of the bearer. These cases have always been when the wrongly styled man occupied some public or official position, generally some Government appointment, wherein he is in association with other officers bearing lay titles. Thus the head of a county lunatic asylum is generally granted the title of "Dr." It marks him, without further explanation being required, as the medical officer in charge of the institution, in contradistinction to the chairman, the visiting justice, the chaplain, the steward, the matron, and the rest. Similarly the prison-doctor and the medical officer of health often obtain from their professional brethren the recognition of a title which really has its origin in expediency, not law. It is probable that the element of professional jealousy may account for this anomaly. When one offering his services to a community, and possessing the legal right to call himself "Dr.," is in rivalry with two or three professional brethren not having that right, it is probable that professional jealousy—using the term without the slightest element of reproach—will urge him to enlighten the community to the fact that he is the real "Dr.," and that the others should be styled "Mr." Now, no one is in rivalry with the prison-doctor or with the medical superintendent of an asylum. They are in charge of a department, and have nothing to gain from the outside public, and there is no personal or pecuniary reason for desiring to deprive them of a title that is intended for convenience. The same attitude, we may add, was observed until a few years ago by combatant officers toward their brethren of the Army Medical Staff. But since the Army Medical Staff began seeking after strange titles their brethren, medical and military, who used to call them "Dr.," in recognition of their official position, now term them "Mr.," adding in a parenthesis that they believe that one for instance is a major-general, for how can such a cumbrous title as *Brigade-surgeon Lieutenant-colonel* ever come into familiar use?

Enough has been said to show that the simple question who should and who should not be styled "Dr." is not very simple to answer. We have only to add that those who consider it worth while to carry in their heads the foregoing rules will not go wrong; while those who do go wrong in their methods of address toward their professional brethren in the United Kingdom will find that the wrongly addressed will bear no malice, for they are daily used to it among their own folk. They are wrongly styled in all the newspapers, are habitually addressed in all law courts by titles they neither have nor aspire to, and are fortunate if their own widows and children fail to describe them wrongly upon their tombstones or memorial tablets.

EDITORIAL COMMENTS.

Total Resection of the Stomach.—We have a number of times recently had occasion to advert to the almost boundless possibilities of modern aseptic surgery. The success of the results obtained is rendered effective not only by the skill and improved technique of the surgeon, but in not a little degree by the prodigality of Nature in making such provision that when the function of one organ is for any reason diverted or lost it can be taken up by some other one or more. Thus the removal of important organs in whole or in part is rendered possible, as not being incompatible with the continuance of life. Such a condition finds its parallel in morbid anatomy, and instances are not rare in which large parts of organs and even entire viscera have been destroyed by disease without causing immediate death. It is, however, only within modern times that the more radical excisive operations have been attended with any reasonable degree of success. Thus, large portions of no less important organs than the brain, the liver, the lungs, and entire kidneys and spleens have been successfully removed. It has also been possible to prolong life and in some instances to effect a permanent cure by the excision of malignant neoplasms from the stomach and intestines. Two most remarkable cases of this category have recently been reported by LANGENBUCH (*Deutsche medicinische Wochenschrift*, 1894, No. 52, p. 968), and seem to indicate a new era in visceral surgery. In both cases resection of the stomach was performed for the relief of gastric carcinoma, with recovery in one and death in the other. In the latter the fatal issue was due to a complication only remotely connected with the operation.

The first case occurred in a woman fifty-eight years old. The stomach was found unusually small and contracted. The new growth occupied largely the posterior wall, although several small nodules were also present upon the greater curvature and had extended to the great omentum. The liver and the adjacent lymph-glands were uninvolved. The peritoneum was removed from the curvatures and a crescent-shaped section, including the nodules, was excised from the greater curvature. The stomach was now withdrawn from the abdominal cavity as far as possible and the abdominal wound closed by sutures. Gauze was carefully packed around the extremities of the stomach to prevent subsequent infection of the peritoneum. The pyloric and cardiac extremities of the stomach were now ligated through healthy tissue with tapes, and finally about seven-eighths of the stomach removed with scissors. Hemorrhage was controlled by digital compression. The circumference of the cardiac section being the larger was first somewhat reduced by suture and the free margins were united. The newly formed stomach had a capacity corresponding to the volume of a hen's egg. The pyloric portion was withdrawn as far as possible and fixed in the abdominal wound, partly by means of sutures and partly by means of iodoform-gauze. But a small amount of chloroform had been used in the anesthesia, although the operation occupied one-and-three-quarters hours.

The woman was soon able to take milk, and later the yolk of an egg with sugar, with no discomfort. In the course of the following day liquid nourishment was repeatedly given. The temperature, however, rose, and the frequency of the pulse increased. The patient appeared to be lost, although there was no evidence of peritonitis or other inflammatory process referable to the wound. The temperature and pulse, however, subsided, and the further progress of the case was entirely satisfactory. After the third day the patient was able to take meat, and when dismissed, after the lapse of several weeks, she had gained twenty-two pounds in weight, although in the interim she had been attacked with pneumonia.

The second case occurred in a woman, fifty-six years old. The stomach was so softened that despite the greatest care in its removal, rupture took place at the cardiac extremity. The small opening, however, was at once closed by suture. Resection was performed as in the preceding case, and the remains of the stomach likewise fixed extra-peritoneally. The sutures introduced failed to hold, and on the third day after the operation the dressings were found soiled with gastric contents. It soon became evident that an insufficient amount of food reached the bowel, and the patient, already greatly emaciated, grew worse and worse. An attempt was made to introduce a tube through the gastric fistula into the duodenum, but the efforts necessary, on account of the resistance at the pylorus, led to such disturbance in the relations of the parts that a local peritonitis resulted and death took place on the sixth day.

Upon post-mortem examination the inflammation was found to have been restricted to this localized area and not to have involved the peritoneum generally.

The Riverside Baths of New York.—We had the pleasure of referring a few years ago (THE MEDICAL NEWS, September 19, 1891, p. 334) to "The People's Bath," and indirectly pointing out the advantages and utility of the privilege thereby afforded, both from the moral as well as from an esthetic point of view. It was to be expected that such a praiseworthy undertaking would be imitated and extended, and the outcome of events has justified the expectation, though not, perhaps, to the degree that is desirable. At any rate the work has proved so successful in New York that it has been taken up by an organization devoted to the interests of those for whom the baths are especially intended.

The Riverside Association is a New York institution, whose object is to aid and elevate workingmen and encourage self-dependence among them. Recognizing that the essential principle of all sanitation is cleanliness, the association has taken practical steps to enforce this principle. Among the useful measures directed toward this end is the establishment of public baths accessible to workmen and their families for a nominal pecuniary consideration. At first a number of small baths on the principle of the rain-bath were built, and the results were at once so salutary that later a larger bath was constructed with facilities for about three-hundred and-fifty bathers a day. The rain-bath is to be preferred in this connection to any other form of bath for obvious reasons. No water is actually wasted, and each bather is provided with a fresh supply. The bathing paraphernalia practically cleanses itself, so that the necessity of assistants for this purpose is obviated.

The bath-house of the association consists of thirteen compartments built of corrugated iron below and wire netting above, for ventilation and light. These are covered with white enamel paint, and present an inviting, clean, and fresh appearance. A portion of each compartment is adapted for a dressing-room, and the remainder for the bath-room proper. A period of twenty minutes is allowed each bather, soap and towels being furnished, and the charge for the privilege is five cents. The popularity of the rain-bath is fully attested by the fact that over eighty-thousand persons availed themselves of the privileges of the People's Baths during last year.

The association has also provided Turkish baths, which may likewise be had at moderate cost. A complete apparatus for the therapeutic employment of water has further been constructed, and opportunity is thus afforded physicians of sending suitable cases for treatment.

We cannot speak too highly of this undertaking of the Riverside Association, which deserves the warmest encouragement and support. As the work is, of course, not self-supporting, the association must look to the generosity of philanthropic people for aid in carrying it on and extending its usefulness as the demands upon it increase. The annual fee is $5.00, which may be sent to that indefatigable advocate of water in the prevention and treatment of disease, Dr. Simon Baruch, who is chairman of the Committee on Hygiene.

Venereal Disease in the English Navy.—Judging by the report of the Director-general of the Medical Department of the English Navy for the past year venereal disease is playing sad havoc in the service. There occurred during the year no less than 9321 cases of syphilis and gonorrhea; 3106 of primary syphilis, 1593 of secondary syphilis, and 4622 of gonorrhea and its sequelæ. The number invalided for these diseases was 198, and there were five deaths. 4923 of the cases came under observation at the home station. The ratio of primary syphilitic patients amounted to 51.66 per 1000, as compared with 74.28 in the previous year. The time that the venereal patients were incapacitated from duty amounted in the aggregate to no less than 282,171 working-days. Apart from its moral aspect the subject is one demanding the most profound consideration. With the figures given before us it is difficult to understand why less attention should be directed to the prevention of venereal diseases than is given to that of other transmissible diseases.

The American Academy of Medicine holds its next meeting in Baltimore, May 4th and 6th, and not, as erroneously given in our issue of February 2d, on May 8th. The new line of work undertaken by the Academy has proved of great interest to the members, has excited comment throughout the medical world, and, we doubt not, will prove of great value in the future to the community and to medicine. It is a distinctive and unique function that is now assumed, and one of profound and growing importance. The problems growing out of the dependent classes and of the mutual relations of these classes to the medical profession and to the community give ample scope for lasting labor and best thought on the part of all conscientious physicians. Every eligible physician should join the Academy and contribute his mite to this much needed work. An exceptional program is already promised, and unusual interest is evident in the next meeting.

The Transmission of Typhoid Fever through Vegetables.—The recent agitation upon the subject of the transmission of typhoid fever through oysters has raised the point of the even greater danger of transmitting various infectious diseases through vegetables, such as water-cress, lettuce, and the like. Water-cress more particularly, it has been pointed out, is grown for the most part in beds where it is in contact with the water of rivers and streams that have doubtless often been contaminated with sewage, or it may flourish in a wild state and often in stagnant and unwholesome ponds and ditches. Cases are also on record in which typhoid fever was believed to be transmitted by the use of contaminated vegetables, but the evidence is unsupported by bacteriologic examination.

Gratitude to the publisher of the British Medical Journal is due from his readers for promptly acting upon our suggestion to improve the quality of the paper of the foreign edition. But we are sorry our old friend the *Lancet* persists in its fatal course. We cannot read or quote it so long as printed on such atrocious paper!

SELECTION.

MEDICAL SCIENCE VERSUS HUMANITY.

It is not often that a conflict arises between the humane treatment of a fellow-creature and the desire for knowledge whose ultimate purpose is the relief of suffering humanity. In a certain kind of fiction and in the sensational reports of college experiments and of clinical operations with which the press occasionally seeks to startle and entertain its vulgar patrons, the medical student and his teacher appear in an unfavorable light. Yet the credence placed in such "literature" must be slight, or a genuine hostility against the profession would be engendered. The falsity of such reports is, best of all, shown by the confidence which is reposed in the medical attendant by the very writers of the alleged horrors of the clinic and the amphitheater.

The profession as a whole must plead guilty to the charges of the various societies for the prevention of cruelty to animals, although such charges are usually greatly exaggerated, the intent of the experimenters ignored, and the innocence of the vast majority of the profession entirely overlooked.

But in regard to the treatment of patients, the exhibition of cruelty or negligence is a rare exception. Even those physicians who are generally recognized by their colleagues to be thoroughly selfish and to be restrained neither by fear of God nor love of man, are often the very ones to whom a patient might most safely intrust himself, skill and ambition taking place of benevolence and devotion. We recall a man, despised by his associates who knew him, hated by internes and justly feared by nurses, who nevertheless maintained a large practice and was almost worshipped by many of his patients. Such men, however, are the exception. It seems that the average man upon entering the practice of medicine assumes virtues and a sense of his responsibilities that he would not have attained in any other lifework.

In striking contrast with this estimate of our own medical profession, we note in German literature a tendency to what seems to us a frank and wholly unconscious brutality. For instance, an abdominal section is made to inspect a liver, notwithstanding the almost positive diagnosis of hypertrophic sclerosis. Two pathologists, examining semen-stains in preparing testimony in a case of rape, express their profound gratitude to Professor So-and-so for allowing them to inoculate a culture suspected to contain gonococci into the urethræ of two paralytics in the hospital ward of the latter. Another report describes the antagonistic action of acid solutions on the development of the germs of chancroid, fifteen persons having been inoculated in two places each, one sore being treated as indicated, the other being simply covered with a watch-glass in order to secure a control-experiment.

Such a tendency is to be deprecated, not alone on the ground of sentiment, but because the habit of study purely scientific, as opposed to an endeavor at the same time to relieve suffering, blunts the perception to just those facts that are to be of vital importance to the practical physician. It is the neglect of the humane consideration of his patients that has made the typical German physician a poor therapeutist. The fact that the average medical article in a German magazine contains an elaborate history of cases, an exhaustive discussion of etiology and pathology, an exact though brief synopsis of symptoms and physical signs, a mere allusion to treatment, and, as a matter of course, a minute report of the findings post-mortem, is an index to a trend of medical thought that is opposed to the very existence of a medical profession. It is this trend that has, to some extent, justified the epithet "Hod-carriers of Science," as applied to our German brethren. It has brought about the purely mechanical consideration of the diseased human body. It is logical, if a man is too hot, to plunge him into cold water. The stimulating action of both heat and cold is ingeniously utilized by inducing labor by the alternate administration of a hot and a cold douche. Yet such logic needs the tempering of common sense. Just such therapeutic suggestions as these have led one of the shrewdest of American physicians to say, "I distrust on general principals any therapeutic method originating with the Germans."

We have no sympathy with those who attempt to cover their ignorance of fundamental facts in medicine by denouncing scientific study as impractical. Such men give digitalis in cardiac hypertrophy and aneurysm and try to overcome ether-poisoning with injections of alcohol. Neither do we intend to incriminate the whole German profession, nor to ignore the vast debt of gratitude which we owe them. Nor, again, do we advocate a neglect of scientific study and a return to the benevolent but ill-guided ministrations of a semi-medical priesthood. Let us realize, however, that the ultimate aim of all medical investigators must be practical—in other words, humane. Wherever advantage may be taken of suffering already existing, it is right—indeed, it is a duty to do so. But we cannot condemn too severely the man who inflicts damage to gain information. Occasional infringements on the law of humanity will react on the medical profession to the extent to which they are known by the laity. A general following of such examples will remove our very reason for existence as a profession.—*Editorial in Medical and Surgical Reporter, January 26, 1895.*

Dr. B. W. Palmer, of Detroit, Mich., and for a number of years editor of the *Medical Age*, died on January 4th.

That Day is Lost when St. Louis does not organize a new medical school. The latest is known as the "Practitioners' School of St. Louis."—*Medical Record*,

REVIEWS.

A Monograph on Diseases of the Breast, Their Pathology and Treatment, With Special Reference to Cancer. By W. Roger Williams, F.R.C.S., late Surgeon Western General Dispensary, and Surgical Registrar Middlesex Hospital. With seventy-six figures. 8vo, pp. 572. London: John Bale & Sons, 1894.

The history of opinion and practice in regard to diseases of the breast strikingly illustrates the change that has come over surgery within the past quarter of a century; the transition from vague pathologic theories, uncertain diagnosis, and inefficient treatment, to clearer understanding and more thorough procedure, so that the surgeon of our day can approach his task with a confidence, and his patient may submit with a hope, unknown to those of any former time. But our limited space forbids us to dwell upon this pleasant theme. That the statement made is correct will, we think, appear as we take up some of the chief points presented in the very admirable work now before us.

A very clear and interesting account is given of the anatomy, morphology, and physiology of the breast and nipple, of their anomalies of defect and of excess, and of abnormities of secretion. In the chapter on polymastia, a section is devoted to the neoplasms arising in supernumerary mammary structures.

The histology of the breast in its resting and active stages is described, and the ground is taken that the pathologic neoplastic processes are aberrant repetitions of those of normal development. Such morbid formations are classified according to their derivation, whether from the archiblastic or epithelial, or from the parablastic or connective-tissue elements of the gland. But in reality both tissue-systems are almost invariably represented in every mammary neoplasm.

Carcinomata, properly so called, are of archiblastic origin. They are divided into the acinous, which are by far the more common, and the tubular. They are all more or less malignant; that is, they have an inherent power of continuous undue increase, owing to the indefinitely sustained, excessive proliferative activity of their constituent cells. Their alveoli differ from those of the normal breast-structure, chiefly by reason of the greater number and the disorderly grouping of their component cells. Hence the ancient belief that there was something specific—a "cancer-cell"—was erroneous, and the long search for it was vain; there is departure from the normal type of development, but no foreign structure is produced. According to Mr. Williams, the only real carcinoma and tumor germs are certain cells that abound in all parts growing and capable of growth, and which never become highly developed, but remain in a more or less unspecialized condition.

The chapter on the general pathology of mammary carcinoma is full of interest, especially the section relating to the influence of heredity. Facts are presented showing that this can be traced, either in a direct line or collaterally, in a large proportion of cases; as, for example, in 33 of 136 consecutive instances (24.2 per cent.) of which the author analyzed the records. On the other hand, the causal importance of traumatism is declared to have been greatly overestimated. The author says: "In the vast majority of cases the outbreak of this disease (cancer) appears to be entirely spontaneous; that is to say, it cannot be attributed to the immediate action of any appreciable extrinsic cause whatever."

Another section in this same chapter contains a most remarkable showing, which we quote:

"Prior to 1837, when the Registration Act came into operation, we have no reliable information as to the prevalence of cancer. In 1840 it caused 2786 deaths, the proportion being one in 5646 of the total population, one in 129 of the total mortality, or 177 per million living; in 1890 the deaths due to it numbered 19,433, being one in 1480 of the total population, one in 28 of the total mortality, or 676 per million living. Thus the proportionate mortality from cancer is now about four times greater than it was half a century ago."

It must be remembered that these figures refer to the mortality from carcinoma generally—not from breast-carcinoma alone. The author goes on to say that the number of persons now suffering from carcinoma in England and Wales must be at least 40,000, as against about 5500 in 1840, an increase of something over 600 per cent. Upon what data this estimate is based, other than official records, does not appear.

The curious fact is noted that according to the same records the increase of carcinoma-mortality has affected males much more than females. From 1851 to 1890 it was, as to the former, 167 per cent., but as to the latter it amounted to only 91 per cent.

Another singular statement is that a marked decline in the mortality from pulmonary and other forms of tuberculous disease has coincided with the increase of that from carcinoma. We are not aware whether any other country can furnish statistics for comparison in regard to the results now quoted.

The modern thorough operation for carcinoma of the breast, first suggested by Mr. Charles Moore in 1867, and ably advocated by our brilliant countryman, the younger Gross, is fully described. At present the results obtained by early recognition of the disease, and by the complete removal not only of the gland itself but of all outlying masses and processes, with absolute cleanliness, are far more creditable to the profession, and vastly better for their patients, than those of the best operators of any former period. What changes may yet be devised for its improvement cannot of course be foreseen; but in its present form it imperatively demands universal adoption.

The statistics given by our author as to the relative length of life in cases operated on and in those left to themselves are very strongly in favor of interference as the rule.

We would gladly discuss other portions of this work, which is full of evidence of the intelligent research and painstaking labor devoted to its preparation. The various forms of non-malignant breast-tumors, the axillary neoplasms, and the inflammatory disorders as observed in both sexes, are described at length and with many illustrative case-histories. But we have reached the limit of space allowed us, and can only hope that this brief notice will serve to induce a general study of one of the most important of recent contributions to surgical knowledge.

It is to be desired that in any future edition the proof-reading will be more carefully done. Many typographic errors offend the eye; in one instance the omission of the word "no" inverts the significance of a case quoted from Bryant.

RELATIONS OF DISEASES OF THE EYE TO GENERAL DISEASE. By MAX KNIES, Professor Extraordinary at the University of Freiburg. Forming a supplementary Volume to every Manual and Text-Book of Practical Medicine and Ophthalmology. Edited by HENRY D. NOYES, A.M., M.D., Professor of Ophthalmology and Otology in Bellevue Hospital Medical College, etc. Octavo, pp. 470; illustrated. New York: William Wood & Co., 1895.

THERE are two or three titles to this book, with decided differences of meaning. "The Eye in General Disease," has to our mind a very different meaning from "The Relations of Diseases of the Eye to General Diseases." The editor says of the book that "the alliances between the eye and the rest of the body are so admirably traced, etc.," and in the author's preface the function of the book is repeatedly emphasized as the setting forth of the relationship between diseases of the eye and diseases of the rest of the body. Despite all this, we are astonished to find that the second sentence of the book reads as follows: "It is rare to find eye-diseases[1] the starting-point for diseases of the nervous system." Observing that this rule consciously or unconsciously is the governing idea of the whole volume, we conclude that the titles, one and all, are utterly misleading. There is no attempt whatever to treat of ocular abnormalities as the cause of extra-ocular disease; on the contrary, there is a disbelief in the fact. The book treats solely of extra-ocular disease as productive of ocular abnormality, and is a valuable gathering of facts pertaining to this restricted field of study. But it must not be forgotten that the title of the book is inverted and wholly misleading. The author knows nothing, at least not a word in the volume would betray the knowledge, of ametropia and abnormalities of ocular balance, either as ocular diseases *per se*, or as capable of setting up disease elsewhere. Now, it is precisely these ocular diseases and their extra-ocular reflexes that occupy nine-tenths of the time and the attention of many American ophthalmologists. One finds no hint in the index or in the text even of headache as caused by eye-strain. It is the same with all reflex neuroses starting in the eye. The exhibition of this astounding oversight in a book written with evident conscientiousness and scientific purpose shows how far apart are to-day the two great schools of ophthalmology. Thousands of articles and facts are utterly ignored by such writers as the author in order to preserve the apparent consistency of a prejudice. The writer who in 1894 pretends to set forth the relations of ocular and general disease without even mentioning the fact of headache, and of functional, gastric, assimilative, and nervous abnormalisms of a hundred kinds due to the eye, should spend an hour in a good refractionist's office, and then go home and keep silent for the rest of his mortal or immortal life.

We would also protest against the non-honoring of the translator. Scholarship should have its reward, not only of pay in money, and the reader should also have the guarantee of a name, that the translation is well done.

TEXT-BOOK OF ANATOMY AND PHYSIOLOGY FOR NURSES. Compiled by DIANA CLIFFORD KIMBER, Graduate of Bellevue Training School; Assistant Superintendent New York City Training School, Blackwell's Island, N. Y.; formerly Assistant Superintendent Illinois Training School, Chicago, Ill. New York and London: Macmillan & Co., 1894.

THE appearance of a text-book on anatomy and physiology, prepared especially for the use of nurses, in which can be found a clear and systematic arrangement of both subjects, will be heartily welcomed by both teachers and pupils of training schools. For, while by its aid the teacher will be saved an infinite amount of trouble and time spent in rearranging notes, in looking up references, and in making long explanations, which she can occupy much better in perfecting her lectures, the pupil will be enabled to follow the oral teaching with much greater ease and intelligence.

Looked at from another standpoint, such a book as that of Miss Kimber's may be regarded as one of the favorable signs of the times, in that the very necessity for its publication would go to show the high standard of education which is now expected of a nurse trained on broad scientific principles. Even the doctors have now ceased to declare that a knowledge of the anatomy and functions of the human body is not essential to the highest type of nurse, since they have found that the more intelligent the nurse, the more valuable her assistance and the more reliable her work, especially in the face of an emergency. Certainly in the past more than one life might have been saved when the nurse was left alone to deal with cases of severe hemorrhage had she known the location of the bleeding vessel and when compression should be made in such cases, and this is only one of many instances that might be cited.

Of late years physicians have very properly laid much more stress on the quality and proper preparation of the food to be given their patients. For carrying on this part of the treatment the nurse must be mainly depended upon, and she cannot do this intelligently unless she is conversant with the subject of alimentation. In her chapters on this subject, Miss Kimber deals minutely with the various changes that go on in the digestive tract, and puts before the student the result of recent researches in a very readable form.

The division of the book into lessons as well as into chapters is most helpful. The illustrations are clear and very well selected with a view to object-teaching in connection with the lectures. We congratulate the pupil-nurses of the present day upon having such a valuable help in their course of instruction.

THE THEORY AND PRACTICE OF MEDICINE. By FREDERICK T. ROBERTS, M.D., B.SC., F.R.C.P. Ninth edition, 8vo., pp. 1168. Philadelphia: P. Blakiston, Son & Co., 1894.

THIS edition of *Roberts' Practice* requires no elaborate commentary. The mere fact that the work has reached its ninth edition is sufficient evidence of its merits and the favorable reception that has been accorded it. The work has been carefully revised throughout; in parts rewritten; and a number of new subjects have been introduced. Sections dealing with the general therapeutics of the principal systems and organs of the body have also been added. There are, however, a few criticisms that seem justifiable. It appears to us that scarcely sufficient importance is attached to the utility of the Brand method of treating typhoid fever. As a matter of fact, the exact mode of procedure is not given in detail. Those who use this method most contend, with justice, that the results obtained with modifications of the original are not at all comparable with those obtained by the method itself. Although the edition bears the date of October, 1894, no reference is made to the treatment of diphtheria by the use of the antitoxin. The section upon influenza lacks the detail in description that the importance of the subject would seem to entitle it to. It appears, too, a little arbitrary to separate the general consideration of the subject of tuberculosis from that of the pulmonary variety. Notwithstanding the criticisms that have been offered, the book easily maintains the prominent position that it has attained as a text-book for both medical student and practitioner.

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[1] The hyphen is omitted in the original, as almost everywhere else that a compound term is used.

CORRESPONDENCE.

ERYTHEMA NODOSUM.

To the Editor of The Medical News,

Sir: Marked cases of erythema nodosum being rather rare, the report of the following case may be of interest:

Mrs. H., fifty-seven years of age, for several years a subject of chronic nephritis and of frequent digestive disturbances, was reported as having an attack of hives. I prescribed, and was called next day, as she was worse. I found half a dozen red lumps, not unlike hives in appearance, on the right wrist, while the wrist, hand, and fingers were considerably swollen, painful, and throbbing, the pain extending up the arm to the axilla. The temperature was 100°, the pulse small and rapid. There was a history of a fishbone stab in the same hand, and the patient complained of slight chilliness at times and of profuse sweats. The possibility of septic infection was seriously considered. Upon the next day, the third day of the attack, the eruption extended further and appeared on the left wrist; the edema was greatly increased, and the temperature had risen half a degree. On the fourth day both arms were involved to above the elbows; there was great discomfort; and the temperature was 102°. On the fifth day the eruption appeared profusely and suddenly on both legs, and the temperature was 104°. There was profound prostration, great swelling of the affected parts, with lumps varying in size from a split pea to a hen's egg and larger, and pain of a deep throbbing and aching character and quite severe. There were nearly one-hundred distinctly separate nodes, besides a number that were confluent and counted as one.

The treatment was purely symptomatic and, except for the lead-and-opium lution, which was grateful locally, seemed to have absolutely no effect.

After the fifth day the temperature fell rapidly to below 100°, where it remained, as the local symptoms abated, only to rise slightly and fall again with each of the three successive crops of the eruption, occurring at intervals of from three to seven days.

The whole duration of the attack was four weeks. It was followed by deep and abundant desquamation and gradual restoration to the normal of the affected parts.

The points of interest in the case were:

1. The degree of fever and marked general depression.
2. The profusion of the eruption.
3. Its location primarily and chiefly on the arms.
4. The advanced age of the patient.
5. The unusual character of the pain.

Respectfully yours,

W. W. Anderson.

Newport, Ky.

FOOT-BALL CASUALTIES AT LOUISVILLE.

To the Editor of The Medical News,

Sir: During the past season Louisville had several foot-ball teams that demanded attention—two High School teams, between whom the rivalry is great, and the team of the Louisville Athletic Club, with which I was associated as surgeon. The latter team played games on their own grounds with eight visiting college teams, and in all but one game were the services of a surgeon demanded.

The following is a list of the casualties: Cut over eye, 6; scalp-wound, 1; fracture of second phalanx of little finger, 1; sprain of knee, 3; sprain of ankle, 1; re-sprain of ankle, 1; bruised shoulder, 1; dislocation of acromion end of clavicle, 1; bruised sciatic, 1; synovitis of toe, 1; broken rib, 2 (different men); venous aneurysm of arm, 1; fracture of leg, 1; total number of accidents, 21. Two of the sprained knees were of visiting players. The cuts over the eye, with one exception, needed one or two stitches to effect approximation, and were all caused by the player being hit with another's head.

These figures show conclusively that some radical change of the existing rules must be made. The larger percentage of accidents among the home teams can be explained in part, at least, by the fact that but two or three of the players were "in training"—they were in no condition to undergo any violent exercise.

All of the trained players, the members who had played on college teams before joining the club team, almost without exception came out of every game uninjured. The majority were smokers—some to excess—some were drinkers, and oftentimes the game would be played directly after eating a hearty meal; while exactly the opposite condition of things prevailed among the college teams.

A broken leg of one of the High School teams shows the severity of the injuries that can happen to inexperienced and untrained players.

I am a great admirer of the game from purely an athletic standpoint, and believe that a few judicious changes in the rules will make foot-ball a clean, invigorating game; as it is now, there are many more chances for injuries to be received than from other athletic sports.

Very truly,

Henry E. Tuley.

111 W. Kentucky St., Louisville, Ky.

A SIMPLE AND INEXPENSIVE FACE-PROTECTOR FOR THROAT-EXAMINATIONS.

To the Editor of THE MEDICAL NEWS,

SIR: The following describes the method of making a face-protector for examining the throat, and costing only about four cents:

Take a pasteboard shoe-box, and through the bottom cut two eye-holes, each one inch square and about midway between the two ends of the box. The lid is not used. Through one side of the box, close to the bottom, cut a narrow slot opposite to the eye-holes, two inches long, and through this slot pass a strip of window-glass, two inches wide and a little longer than the width of the box, measured externally. This glass will thus pass behind and cover the eye-holes. One end of the glass is notched to fit into a smaller slot in the other side of the box and a strip of adhesive plaster closes the long slot and holds the glass in place. The box fits over the face and is held in place by a cord or gum-elastic. It protects the face in front and at both sides, and fits under the chin and over the top of the head. After each examination burn the box and fit the glass, after disinfection, to a new box. The glass costs practically nothing, and lasts indefinitely.

A new box may be fitted up in a few minutes. The glass may be carried in the pocket and attached to a box at the patient's house. Having been called hurriedly to a case of diphtheria, and having nothing of the kind then at hand, I hastily improvised this primitive and rude device. As it has proved to be entirely satisfactory I shall continue to use it.

Respectfully, B. F. R. CLARK.

4037 LOCUST ST., PHILADELPHIA.

NEWS ITEMS.

The American Academy of Medicine will hold its twentieth annual meeting in one of the buildings of the Johns Hopkins University, Baltimore, on Saturday, May 4, and on Monday, May 6, 1895.

The following are the titles of the papers that have been promised: "The Address of the Retiring President, J. McFadden Gaston, Atlanta, Ga.; "Expert Testimony," Henry Leffmann, Philadelphia; "Hospital Management," W. L. Estes, South Bethlehem, Pa.; "The Proper Teaching of Physiology in the Public Schools as a Means of Preventing Intemperance and Venereal Disease," De Lancey Rochester, Buffalo, N. Y.; "The Problem of Dependency as Influenced by the Chinese in America," W. F. Southard, San Francisco; "What Agencies Conspire to Check Development in the Minds of Children," J. Madison Taylor, Philadelphia; "How to Avoid the Dispensary Abuse?" Emma B. Culbertson, Boston; "Contract Medical Work and Fees," Charles P. Knapp, Wyoming, Pa.; "What Shall We Do With Our Alcoholic Inebriate?" J. W. Grosvenor, Buffalo, N. Y.; "Life Insurance in its Relation to one of the Dependent Classes," E. O. Bardwell, Emporium, Pa.; "Some Results of Competitive Medical Charity," George M. Gould, Philadelphia; "Criminal Anthropology," E. V. Stoddard, Rochester, N. Y.; title to be announced, Leartus Connor, Detroit, Mich.; "The Increase of Insanity," Gershom H. Hill, Independence, Ia.; "A Perfect Consultation," L. Duncan Bulkley, New York; "An Analysis of the Reports of the Examinations by the State Boards of Medical Examiners," Perry H. Millard, St. Paul, Minn.; "The Limits of a Physician's Duty to the Dependent Classes," James W. Walk, Philadelphia; "The Economic Aspect of American Charities," Bayard Holmes, Chicago; "Is Our Financial Relation to Our Patients and Community the Best Possible?" Woods Hutchinson, Des Moines, Iowa.

Dr. Erasmus Darwin Safford died January 6, 1895, at Parkersburg, W. Va. He was born at Point Pleasant, Mason County, W. Va., July 1, 1819. His father, grandfather, and great-grandfather had been successful physicians, so that early in life he naturally turned to the study of medicine. After assiduous reading with his father he soon was enabled to take a course of lectures in the old Pennsylvania University at Philadelphia, where twenty years before his father had attended.

In the spring of 1841 he assumed the practice of his deceased father in Parkersburg, and at once became successful. In August, 1862, he was appointed Surgeon-major of the Sixth Virginia Volunteer Infantry, serving with skill and honor until the close of the war. Because of injuries to his health incurred during the exposures on the field during this period, he had since the war gradually relinquished active practice.

Dr. Safford was particularly skilful in diagnosis, and remarkably successful in the treatment of the diseases of women and children. In an extensive practice, covering a period of forty-eight years, only one case of obstetrics resulted fatally, and in this instance delivery was preceded by a heavy fall, causing internal hemorrhage. His treatment of typhoid fever was equally successful. He was a great student, and kept informed through the latest publications. A man of brilliant mind, with the enthusiasm of the student, loyally devoted to the highest medical ethics, with unusual professional skill united to a womanly tenderness, Dr. Safford possessed a rare nature which, under favorable environment, would have made his fame more than local.

Dr. Samuel K. Ashton, a well-known physician of Philadelphia, died February 11th, at the age of seventy-three years.

BOOKS AND PAMPHLETS RECEIVED.

Bureau of Education, Circular of Information No. 6, 1893. Contributions to American Educational History. Edited by Herbert B. Adams. No. 17. Higher Education in Iowa. By Leonard F. Parker. Washington: Government Printing Office, 1893.

Tricuspid Insufficiency. By Frank J. Thornbury, M.D. Reprinted from the Buffalo Medical and Surgical Journal, 1893.

Trichinosis. By Frank J. Thornbury, M.D. Reprinted from the Cincinnati Lancet-Clinic, 1893.

Air and Contact Infection. By Frank J, Thornbury, M.D. Reprinted from the St. Louis Clinique, 1893.

A New Electrode for Hydro-Electric Applications of the Constant Current. By Margaret A. Cleaves, M.D. Reprinted from the New York Medical Record, 1894.

Diseases of the Chest, Throat, and Nasal Cavities. By E. Fletcher Ingals, A.M., M.D. Third edition, revised, with two hundred and forty illustrations. New York: William Wood & Co., 1894.

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ORIGINAL ARTICLES.

THE TREATMENT OF SYPHILIS WITH INTRAVENOUS INJECTION OF MERCURIC CHLORID.

BY WALTER LYTLE PYLE, A.M., M.D.,
OF WASHINGTON, D. C.

THE object of this paper is to present a new treatment of syphilis, which has been particularly successful in the hands of Italian physicians for the past two years. Recent reports of syphilographers indicate a tendency to supersede the older methods of treating syphilis, such as by oral medication, baths, vapors, inunctions, etc., by some speedier and more certain method. Dr. L. Wolff, of Philadelphia,[1] in a very admirable paper, in which he has embodied reports from many Continental observers, proves conclusively that the hypodermic administration of the salts of mercury is not only a warrantable, but an advisable procedure, possessing decided advantages. It is naturally open to many objections, and has been fully discussed by competent critics. It is not in the province of this paper to reopen this discussion, but to describe a new method, which obviates many of the objections to the hypodermic injections; to give a dispassionate review of it, and to excerpt from reports of cases from the Italian in which a thorough trial of the treatment has been made.

At the present time it is impossible to report any cases under personal observation, as a satisfactory or trustworthy report cannot be made until the treatment has been given at least several months' trial.

The intravenous injection of mercuric chlorid in the treatment of syphilis was originally suggested by Prof. Guido Baccelli,[2] of Rome, who had previously been quite successful in the treatment of the pernicious as well as the other forms of malarial fever by the intravenous injection of the salts of quinin. The good results obtained in this manner impressed Baccelli with the advantage of direct medication to the corpuscular elements of the blood in certain phases and types of disease. At first it was thought that the drug would cause coagulation of the blood, but experiments on the lower animals proved the contrary. Baccelli injected a dog intravenously, with a solution of mercuric chlorid, 1 : 1000, until five centigrams of the salt were injected in a single dose without subsequent toxic symptoms and only slight salivation. He then directed his experiments to the treatment of some obstinate cases of organic syphilis, which had resisted all other treatment, by the intravenous injection of mercuric chlorid 1 : 1000, commencing with doses of 0.001 gram. (equivalent to 1 gram of the solution) and progressively increasing the dose to .005 gram. His investigations met with the most brilliant results, and since then thorough investigation into the merits and value of the method has been made by Baccelli, Jemma, Colombini, Nieddu, Campana, and many others throughout Italy.

In the preparation of the fluid for injection the following formula is used:

Mercuric chlorid	1 grm.
Sodium chlorid	3 grms.
Water	1000 grms.

A small quantity of alcohol may be added to facilitate solution. The mixture should be well stirred, and filtered until perfectly clear. It is advisable, but not necessary, to sterilize it, both to be perfectly aseptic and to facilitate solution.

A ligature is applied above the elbow, and any one of the superficial veins in the neighborhood, which soon become prominent, may be selected as the point for injection. The point selected and the surrounding area are then thoroughly scrubbed and disinfected with a 1 : 1000 solution of mercuric chlorid or a 5 per cent. solution of carbolic acid. The needle, previously sterilized, is plunged directly toward the center, at the point selected, and a few drops of blood allowed to ooze out, assuring entrance into the vein; the barrel is carefully applied, avoiding any entrance of air.[1]

Loosen the ligature and make the injection, at first using only one gram of the solution, and progressively increasing to four grams at a dose. Occasionally on the withdrawal of the needle there is some extravasation of blood into the neighboring subcutaneous tissue; but this is absorbed very quickly, and is only of occasional occurrence. Repeated injections can be made in the same vein. In a case reported by Jemma seventy-five injections were made in the median cephalic vein. This vein and the median basilic are the best to use.

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[1] Therapeutic Gazette, May, 1894, p. 309.

[2] Gaz. med. di Roma, 1893, xix, 241–245.

[1] Recent experiment has shown that a small quantity of air can be injected intravenously into a rabbit without any harmful effect.

There are two precautions that should be remembered: First, always use a fresh solution, which the physician should prepare himself, to be assured that the salt has not decomposed, which is often the case after the solution has been standing some time. No after-dressing is needed, and it is not necessary to cover the wound of puncture with collodion. Second, do not use a concentrated solution. That of 1 : 1000 is to be preferred, but in late injections a 1 : 500 solution may be used.

The following extracts of cases reported by Baccelli will convey the degree of usefulness of this treatment:

CASE I.—A man, twenty-eight years of age, contracted syphilis in February, 1890. He was first seen in February, 1892, two years after the appearance of the initial sign, with distressing symptoms of cerebral syphilis, and he was completely blind. From May until December, 1892, energetic treatment with van Swieten's solution, mercurial inunctions, potassium iodid, and hypodermic injections of calomel proved of no avail, and the symptoms remained the same, with only a slight alleviation of the persistent headache. In spite of this, the original diagnosis of a syphilitic tumor at the base of the brain was adhered to, and on January 3, 1893, the intravenous injections were begun. The initial dose was one gram of the standard solution, which was gradually increased to five grams. On February 19th, after twenty-eight injections, all the other symptoms had disappeared, and the blindness, which was before complete, began progressively to improve.

CASE II.—A man, fifty-five years of age, suffered from a syphiloma of the tongue. Local treatment with the ferric chlorid, silver nitrate, the actual cautery and ordinary syphilitic treatment gave negative results, and injections were commenced. After twenty-four the improvement was so marked that a permanent cure seemed certain.

CASE III.—The patient had stenosis of the bronchi, due to syphilis, and there were severe attacks of suffocation, resembling asthma. The attacks have since disappeared after a short course of injections.

Baccelli tried intravenous injections in several cases of erysipelas with success, as follows:

CASE IV.—The patient had erysipelas of the gluteal region, and was subjected to intravenous injections of the standard solution in the ordinary manner, with a resultant cure in four days.

CASE V.—In a case of erysipelas of the face a cure was effected in three days by intravenous injections.

R. Jemma, of Genova, reports the following cases:[1]

CASE VI.—A man, thirty-eight years old, suffered from cerebral symptoms of one year's duration, the most prominent of which were a general pseudo-paralysis, Romberg's symptom, and diminution of sight and hearing on both sides. Seventy-five injections were given. His general state was markedly improved. The former weakness and pain disappeared. The patient walked without the aid of a stick. The sight and hearing steadily improved and were progressing toward recovery. He was yet under treatment.

CASE VII.—The patient was a man, thirty-one years of age, who contracted syphilis three years previously to applying for treatment. On application he showed symptoms of cerebral syphilis, the most prominent being daily epileptiform convulsions. Beginning with 0.001 g. of the salt and increasing to 0.003 g., twenty injections were made. After the first injection the improvement was marked. The convulsions decreased, and at the time he left the clinic the man had not had a convulsion for eight days. His power of speech improved daily, and a cure was expected. Previously to the injections inunctions of mercury and large doses of potassium iodid had proved of no avail.

CASE VIII.—A woman, twenty-five years of age, had contracted syphilis four years previously, and on presentation at the clinic was suffering with constitutional symptoms Among these were oligemia and multiple neuritis. She had been confined to bed for some time, and had resisted all treatment. Mercurial inunctions and large doses of potassium iodid resulted negatively. Intravenous injections of mercuric chlorid were administered, and improvement was almost immediate. She left the clinic greatly improved.

CASE IX.—A man, twenty-seven years of age, contracted syphilis one year previously, and was suffering from constitutional symptoms and syphilitic adenopathy, together with the pains of neuritis. Sixty injections were given and were followed by steady improvement. The pains disappeared, and the ganglionic tumefaction diminished. The patient was still under treatment.

Dr. Jemma also employed intravenous injections of mercuric chlorid in six cases of typhoid fever, one of rheumatism, one of erysipelas and one of tuberculosis, but had purely negative results. One of the typhoid cases improved after the injection, but there was no influence on the temperature.

M. A. Dagnino,[1] in the clinic of Secondi, of Milan, reports the case of a man, twenty-three years of age, suffering from syphilitic iritis, showing pinkish-yellow nodules on the iris, who was cured in thirteen days, using in all 0.032 g. of mercuric chlorid. P. Colombini[2] has treated eighteen cases with varying degrees of improvement. In some cases, however, the treatment was suspended on account of salivation or diarrhea. Dr. Antonio Nieddu[3] has reported seven cases, all of which have shown great improvement. In fact he says that after four or five injections improvement was marked, and ultimate good results were invariably obtained.

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[1] Riforma Med. Napoli, 1893, ix, pp. 3, 159-163. Cronaca de Clin. Med., di Genova, 1892-93, 266, or Boll. di R. Accad. Med. di Genova, July, 1893.

[1] Gazelta Deg. Osped. e Del. Clinic, 1894.

[2] Atti della R. Acad. de fis in Siena. iv, vol. v.

[3] Gior med. del R. Marina, Nov. 1893.

The disadvantages of the older methods of medication in syphilis are well known to every one. Thorough exposition of the hypodermic injections has been made by the papers of Dr. Wolff, Dr. J. William White, and others, and it may be advisable to present the merits of the injections proposed in the treatment of syphilis and to give the reasons that I consider valid for and against their use:

1. There is absolute certainty of absorption, which cannot be obtained by hypodermic or other methods.

2. There is no pain to speak of. Intra-muscular and hypodermic injections are very painful. The subconjunctival injections in the treatment of syphilitic iritis are impracticable on account of the pain. This method is as successful with no pain. Not a single patient of all those reported has objected to the treatment. In using the hypodermic treatment it is not possible to use any local anesthetic successfully.

3. There is no disturbance of the digestive tract during treatment. In fact, a slight salivation and diarrhea, temporary only, are the only local disturbances reported.

4. There is more rapid absorption and therapeutic effect than by any other method.

5. Less of the mercurial salt is required.

6. Absolute exactitude of dosage can be obtained, which is a rational necessity. Owing to variations in absorption, this is the only method that offers this advantage.

7. It seems to be completely safe; not one accident has been recorded.

8. It is perfectly reliable. All cases reported have shown some improvement, and never any retrogression.

9. Abscesses are absent. These cannot always be avoided in the hypodermic method.

10. There are no dermal irritations or eruptions, such as follow friction or inunctions.

11. The hysteric or nervous symptoms sometimes associated with the hypodermic method are never observed with the intravenous injections.

12. It is successful often when all other methods fail.

13. There is no history of recurrence after a cure.

14. Mercuric chlorid has a preservative action on the red blood-corpuscles, and hence must be valuable intravenously in such a disease as syphilis, in which there is a strong tendency toward destruction of the red blood-corpuscles and subsequent anemia.

The objections offered to the intravenous method may be summarized as follows:

1. In the early stages of syphilis the lesions are in the skin and connective tissue, and, therefore, intravenous injections do not offer the most immediate and satisfactory method of medication.

2. Syphilitic gummata have no vascular supply, and the intravenous injections do not directly reach them. Despite this fact, it is more than probable that the gummata are influenced by mercurial medication as rapidly by the intravenous injections as by any other method.

3. There is a belief that mercuric chlorid, intravenously, has only a temporary action, being quickly eliminated, necessarily making the treatment longer in such a case than with hypodermic injections of solutions of insoluble salts (Columbini).

While it is true that insoluble salts are eliminated more slowly than the soluble, and hence have a more permanent effect, yet observation of the relative merits of soluble and insoluble mercuric salts has shown that mercuric chlorid has a decided preference and gives the most satifactory results generally. Dr. Wolff's communications verify the foregoing statement. This is most likely due to the rapid absorption and action of the drug in contradistinction to the slow and uncertain absorption of the insoluble salts. Uncertain elimination and absorption are always unsatisfactory factors to deal with in therapeutics, and complicate any attempt at definite and scientific treatment.

The disadvantages of the intravenous injections are as follows:

1. The needle may not reach the vein; but this can be remedied by applying the needle first and awaiting the appearance of a few drops of blood.

2. Some of the blood may extravasate into the subcutaneous tissue, adjacent to the point of injection; but this has been of very rare occurrence, and the blood is soon absorbed.

3. There is likely to be a slight stomatitis at first.

4. There is the appearance of albumin in the urine after the injections, which, however, is also often resultant on the hypodermic administration.

5. There is, as in all intravenous injections, a subsequent polyuria and increase of urea, but neither has any special disadvantage.

6. During the injection, through a reflex action on the circulatory center, fainting may supervene, but is of no vital import.

7. Jemma has seen slight salivation immediately after the injection of small doses. This is liable to happen in any administration of mercury.

Conclusion. The advantages shown so far overbalance the objections that, viewing the present status of treatment, we can but accept this as the most successful at our hands. However, I would not advocate it in cases easily amenable to ordinary treatment or in the early stages of syphilis, but consider it of especial value in the obstinate cases, resisting other treatment, or in advanced cases of organic syphilis, or when immediate relief is peremptory by reason of pain, encroachment on a vital part, or rapid destruction of tissue. Investigation may prove it to be most valuable immediately after the diagnosis is made, eliminating or destroying the syphilitic virus before it has produced any decided effect on the general system. At present there is no evidence to warrant this statement; but, as the method is virtually devoid of dangerous or untoward results, it should be given some trial in the beginning of the disease. When the disease is modified by the intravenous injections, it is very probable that the treatment may be continued successfully by the common methods.

Viewing the brilliant results in the cases reported, it would seem that this method is a most valuable one, and one which, in the hands of careful practitioners, will render all forms of this dreadful and everlasting scourge readily curable. It certainly deserves careful study and thorough trial in the hands of American physicians. I should be glad to receive any communications relative to this subject, and trust the method will be given thorough test and discussion.

1701 H STREET, N. W.

OPHTHALMIA NEONATORUM.[1]

BY C. A. VEASEY, M.D.,
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I SHALL not now attempt to give any elaborate description of this disease, nor shall I review very many of the methods of treatment as practised by different ophthalmologists, but shall confine myself to the characteristics as they appear in typical cases and to those methods of treatment that have in my own hands given the most satisfactory results.

The clinical history of the disease is usually divided into four stages; but as it passes from one into another so imperceptibly it is often difficult, if not impossible, to make any distinction between them. The first, or incubative period, is of short duration, lasting a few hours only, and gradually merges into the second, or lymph-forming stage. This, in a few hours more, is followed by the period of pus-formation, lasting, according to the severity of the attack, from one to several weeks, and if everything goes well is replaced by the last stage, that of recession, which is marked by the gradual disappearance of the discharge and the return of the conjunctiva to a healthy and normal condition.

The appearance of a patient suffering with this affection is so characteristic that it is rare for any mistake to be made in the diagnosis. Appearing, as it usually does, on the third day after birth, though it may appear somewhat earlier or later, with a slight redness of the conjunctiva, the lids are soon swollen and tense, the conjunctiva itself velvety and smooth, and upon the surface of which can be detected minute flakes of lymph. In an exceedingly short time, however, the formation of lymph changes to the profuse secretion of pus, the conjunctiva frequently displaying huge cracks in its surface and occasionally being so tender that there is an admixture of blood with the purulent discharge. In mild cases the ocular conjunctiva is scarcely more than hyperemic, but in many it becomes hard and tense, forming an elevated ring around the cornea. Occasionally the upper lid is so heavy from the swelling that it becomes pendulous and hangs down over the margin of the under lid. The disease, which ordinarily has begun in one eye, usually affects the other also, though, as a rule, not in such a severe degree. There is present, of course, severe pain, and the infant's physical condition is much reduced, as would be the case no matter in what part of the body so much pus was being formed.

In most cases in from three to six weeks, if seen early and proper treatment instituted, the discharge gradually disappears, leaving the conjunctiva in a healthy condition and the visual acuity unimpaired, though in a few there remains a chronic conjunctival inflammation.

In all cases the greatest danger is from some corneal complication. It may begin as a mere abrasion of the cornea from rough handling, which if it occur during the pus-forming stage may result in a large perforating ulcer. Again, the whole cornea may become infiltrated and opaque, small abscesses forming, which may open externally, or into the anterior chamber; or the ulceration may begin at the margin and extend in a ring-like manner around the cornea, there being but little infiltration of the corneal substance, and, as Swanzy[1] has pointed out, these are likely to occur in those cases in which the swollen bulbar conjunctiva forms a hard ring around the cornea, causing considerable pressure, occasionally even covering the ulcer, and are likely to perforate. The greater the involvement of the ocular conjunctiva and the earlier the corneal complication manifests itself, the more serious does the disease become and the more likely is it to result in some impairment of vision, if not absolute blindness; for if the ulcer should perforate, the anterior chamber empties itself, the iris usually becomes incarcerated, and the thinned cornea, unable to resist the pressure, bulges forward more and more until a large anterior staphyloma results; or, on the contrary, after perforation takes place, the eyeball may shrink in size until that condition of affairs known as "phthisis bulbi" is reached.

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[1] Read before the J. M. Da Costa Medical Society, December 7, 1894.

[1] Swanzy: Text-book, "Diseases of the Eye," p. 101.

The etiology of the affection is the introduction into the conjunctival cul-de-sac of the discharge from some portion of the genital tract, and the inoculation may take place during the birth of the child, when it is said to be primary, or the infecting material may be placed *in situ* after birth through the carelessness of the attendant, the inoculation in this case being secondary, and the disease manifesting itself later than the third day.

During the descent of the infant through the birth-canal the inoculation may occur in one of several ways. The lids may be opened in making manual examinations in face-presentations, or in the use of instruments, or in the passing of the face over the tense perineum; and the eyes not being quickly and thoroughly cleansed after birth, the infectious material obtains a footing and the disease becomes rapidly established. Those cases in which the inoculation is secondary are caused by the direct introduction of the infectious material by the use of unclean water, sponges, towels, etc., or, perhaps, through the failure on the part of the attendant to have everything coming in contact with the infant thoroughly cleansed.

The underlying cause in most cases is a peculiar micro-organism known as the gonococcus of Neisser, which the discoverer after whom it is named found in all gonorrheal discharges and also in the discharges of all severe cases of ophthalmia neonatorum, though we occasionally see slight cases set up by a vaginal discharge of a non-specific type, and in these the gonococcus is, of course, absent. The more numerous the gonococci, the more severe and dangerous is the disease; and, on the contrary, when the number of these micro-organisms begins to decrease, as shown by microscopic examinations of the discharge, the disease is becoming more controllable and less dangerous.

In discussing the treatment it is customary to do so under two heads—prophylactic and curative. Among the means at our disposal which come under the former heading none is more widely known, or gives better results if used, than that which was introduced by Professor Crédé, of Leipsic. As soon as the child is born, and before the cord is cut, if there is time, two drops of a 2 per cent. solution of silver nitrate are dropped into each eye of the infant, the lids and surrounding parts having first been cleansed with a pledget of absorbent cotton. If there is much reaction, compresses are wrung out in a cold solution of boric or salicylic acid, and placed on the closed lids. Sometimes there is considerable hyperemia from the use of the silver-solution, but it almost always disappears in a few days; and, when we consider the great gain by the use of this preventive method, the slight inflammation is not any drawback. Prior to the use of the method Crédé's statistics showed that 10 per cent. of all newly born children had this disease, while after its use the proportion was reduced to less than one-half of 1 per cent.

Another method of prophylaxis is that known as the Hegar-Korhr, which consisted in washing the face and eyes of the newly born babe with a solution of mercuric chlorid (1 : 1000), and this also gives a large reduction in the proportion of cases of the disease. Others advocate the use of aqua chlori, claiming that it is fully as effective and less irritating than the solution of silver. Perhaps, after all, it is not so much what method of prophylaxis we use as the fact that we do use some method, and use it thoroughly. It is to be understood that no matter what method is adopted after the birth of the child, during the descent through the birth-canal all precautions against infection, such as antiseptic vaginal douches, thorough cleansing of the hands and all instruments, etc., coming in contact with the parts, are to be most scrupulously effected.

Since the time of the introduction of antiseptic midwifery and the decrease in the percentage of those diseases caused by the absorption of germs from the genital tract, it is perhaps unnecessary to use silver nitrate in each and every case, provided the most scrupulous care be exercised to keep the birth-canal aseptic during labor; but in each case in which there is the least suspicion of specific disease, or even a moderately bad leukorrhea, in addition to the strictest antiseptic precautions during the birth of the child, I would insist upon the use of the Crédé method, or one of its recognized substitutes, immediately afterward.

If the disease has become established, our efforts must then be directed, first, to the reduction of the inflammatory condition of the lids and conjunctiva; second, to the prevention of any corneal complication, or the treatment of any already existing. If there is much swelling, and there be no involvement of the cornea, I prefer to employ cold compresses at frequent intervals. These are applied by having a number of small pieces of flannel or lint laid upon a block of ice, and placing them, two or three in thickness, over the inflamed and swollen lids, changing them at intervals of one minute. These are to be used from fifteen to thirty minutes, every hour or two, or less frequently, according to the severity of the disease. Should there be any corneal involvement, however, hot compresses should be employed instead, in the same manner and at the same intervals as the cold, water at the temperature of 120° F., or about as hot as the hand can bear for an instant, being used instead of the block of ice. As the water grows cooler more hot water should be added to keep up the temperature.

Great care must be exercised to keep the conjunctival cul-de-sac cleansed of the purulent discharge. This can be accomplished by frequent washings with a saturated solution of boric acid or a weak solution of mercuric chlorid (1 : 6000), cleansing the eyes at intervals of fifteen minutes, or less frequently, according to the amount of the discharge, to be continued during the night as well as during the day. Frequent cleansing of all the discharge from the lids is of the utmost importance. Other solutions have been used for the purpose, such as mercury cyanuret, potassium permanganate, hydrogen dioxid, creolin, chlorin-water, trikresol, pyoktanin, and many of the astringents; but the two mentioned first, boric acid in a saturated solution and mercuric chlorid in the strength of 1 : 6000, are probably as efficient as any, acting, as they do, only feebly as antiseptics (it being detrimental to the cornea to use strong solutions of the mercurial), but also as astringents.

Once a day, when the conjunctiva is in the proper condition, the lids being everted, an application to them of a solution of silver nitrate should be made with a camel's-hair brush or a bit of cotton rolled on the end of a smooth stick (both to be burned immediately afterward) and the excess washed off with a solution of sodium chlorid. It is preferable to begin with a moderately weak solution, say 1 per cent., and increase the strength if necessary. Occasionally it is necessary to use the mitigated stick, and, if this is done, great care must be exercised to wash off the excess, otherwise damage may be done to the cornea.

I wish to enter my protest against the method practised by some physicians of dropping the solutions of silver nitrate into the conjunctival cul-de-sac, so that they come in contact with the cornea, as a remedy to be continued. They will do no harm when dropped in immediately after the birth of the child, and again in a day or two if required; but the continuous use of the drug, day after day, in this manner, will in itself cause an opacity of the cornea by its caustic action—a thing to be studiously avoided and a complication which is inexcusable. I have under my care at the present time an infant on whose eyes this method of using the silver-salt was employed, and it has a milky haziness in each cornea, brought about by the caustic action of the drug. The physician who brought me the case stated that the solution had been instilled twice daily for three weeks and that the strength was 1 per cent.

As to the proper time for making the applications of the silver-salt, it is my custom not to apply it early, before there is free secretion of pus, but to wait until the latter has fully established itself and the conjunctiva has become somewhat soft. The applications should be made daily, and immediately after a strong solution has been used cold compresses should be employed for a few minutes to reduce the inflammatory reaction which may result.

If at any time the cornea should become in the least degree hazy, a drop or two of a solution of atropin, gr. iv–f℥j, must be instilled at once and continued twice or thrice daily, and, as stated before, hot compresses must be used, these seemingly having a decided advantage over the cold in such cases. Should an ulcer form and threaten to perforate, it is perhaps better to anticipate nature by performing paracentesis of the anterior chamber and to keep it open for a few days, thereby assisting in the reparative process by the reduction of intraocular tension; and, no matter how severe the corneal complication should become, the vigorous and careful treatment of the conjunctiva should be carried on just as if it were not present.

By following carefully some such plan of treatment the vast majority of cases, if seen before any corneal involvement has taken place, can be readily cured, though, unfortunately, we sometimes see cases which, like the one of Randall,[1] through some peculiar influence that we cannot see or determine, and, in spite of all we can do to prevent, go from bad to worse, until the cornea ulcerates and the eye becomes practically lost. Knowing that such cases do exist, we should be careful to protect ourselves and our colleagues by being guarded as to any exact prognosis, no matter how simple a case may seem to be.

The necessity for being so careful in the prophylaxis of this affection is very well shown by the fact that carefully compiled statistics[2] show that in Spain and Belgium 12 per cent. of all cases of blindness are caused by this disease; in Switzerland, 26 per cent.; in the United Kingdom, 30 per cent.; in Germany and Austria, 33 per cent.; in the United States more than 32 per cent.

It has also been shown that more than 70 per cent. of all cases of blindness occurring in the first year of life are attributable to this disease, and that in nearly 9 per cent. of all births in which no preventive methods are employed ophthalmia results. These facts being considered, there should be no hesitation in employing every known and available precaution to prevent the disease.

The last census of the United States shows the total number of blind to be 50,411. If we take 32 per cent. of these, the number estimated to be due to ophthalmia neonatorum, we have in round numbers 16,131 whose miserable and most pitiable, as well as almost helpless, condition was brought about by this disease, the large majority of which might have been prevented had the prophylactic treatment been employed. By consulting the census records[1] from 1850 to 1890 we find the following statistics for the State of Pennsylvania:

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[1] Journal American Medical Association, November 25, 1893.

[2] de Schweinitz: Annals of Gynecology and Pediatry, January, 1892.

Year.	Population.	No. of Blind.
1850,	2,311,786	829
1860,	2,906,215	1187
1870,	3,521,951	1767
1880,	4,282,891	3884
1890,	5,258,014	3925

The number of blind to each 1,000,000 of population in each of these periods is as follows: In 1850, 358; 1860, 408; 1870, 501; 1880, 905; 1890, 765. Thus it will be seen that the proportion of blind has steadily increased during each decade except the last; and, as I can learn of no method of enumeration for our State such as Dr. Bettman refers to for the State of Illinois[2] that would have materially increased the number in 1880, I am obliged to think that the proportion of infants affected by this disease is on the decrease, and that it is owing to the greater stress which has been given the subject in our medical schools during this last decade, to the number of papers that have been written calling the attention of the general physician to the disease, to the increased employment of antiseptic midwifery, and to the general and active discussion in many of our medical organizations throughout the country which, in many of our States, has resulted in legislation that, in a few words, makes it a misdemeanor, punishable by fine or imprisonment, or both, for any nurse or attendant upon a case of labor not to report to some reputable physician, or to the Public Health Officer, if either or both eyes of the infant should become in the least red or inflamed at any time within two weeks after birth. As is well known, if the case is seen early and proper treatment instituted, the result will almost always be a cure with perfect vision, though, as stated, there are some cases, malignant from the beginning, that go from bad to worse, despite all our efforts to the contrary.

It is hoped that we shall soon have such a law in our own State. The matter was brought to the attention of our State Medical Society at its last meeting by Dr. Gould, and a committee was appointed to use all means to have some such legislation as that indicated effected at the next meeting of our legislative bodies. Such a bill has been framed, is receiving the indorsement of medical societies, and I trust will have the support of every physician in the State.

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FURTHER CONSIDERATIONS ON THE INFLUENCE OF OLD AGE IN SURGERY.

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Judging from the recent literature on the subject, it may reasonably be inferred that more interest is manifested and greater trust placed in the recuperative powers of the aged than was formerly the case. The number of recorded cases of recovery from grave injuries and severe operations is fast placing the chances of old people, when in need of surgical aid, in a more hopeful light. The plea of old age as a bar to operation has, in times past, been so urgently insisted on by the friends and family of the patient that the surgeon has too often acquiesced, and permitted the opportunity to render the necessary assistance to escape him.

The number of persons requiring surgical operations when well advanced in years, above the age of seventy, for instance, is more numerous than the casual observer would suppose. The lessened activity, loss of muscular power, and the inability to walk firmly after this period render them more liable to falls, resulting in fractures, bruises, and lacerations, than is the case during the more active period of life. Then, too, the bones are more brittle, requiring less force to produce fractures than in the stronger bones of the young adult.

The absorptive and degenerative changes that take place in the soft as well as in the hard tissues of the body as age advances would seem, from a physiologic point of view, to discourage the idea that grave operations and injuries could be so successfully recovered from. Clinical experience, however, seems to be very fairly on the road toward establishing the propriety and even the necessity of operations in the aged, when demanded. The number of cases reported during the past ten or twelve years should encourage us in performing necessary operations in this class of cases, and in forgetting the plea of "old age," which has in former years been so successfully urged, often, I believe, to the detriment of the patient. Old people have been too often unfairly treated by surgeons, especially with respect to fractures. They have been allowed to go without suitable care, yet many have recovered with union, generally with deformity, when proper and skilful treatment would have given perfect or, at least, useful limbs, and some comfort in their declining years. Certainly a bone that will unite with the disadvantage of no adjustment will become repaired with greater certainty and more quickly if properly adjusted and splinted. Modern splints can be so neatly and snugly applied, particularly to the long bones, as to enable the nurse to handle the patient and relieve him from the discomfort of remaining constantly in one position, which has always been regarded as the chief difficulty in the management of fractures in the aged. The freedom of movement now obtainable prevents passive congestion, which is so common in all feeble persons. A well-adjusted plaster splint, which can be applied to the fracture a few days after the accident, enables the nurse or attendant to move the patient from side to side. When the break is below the knee the patient can be moved into an easy chair during part of the day, and even if the fracture be in the shaft of the femur he may, at least, be propped up in bed. In fractures of the arms, if the patient be strong enough, he may move about freely.

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[1] After the manner of Bettman for the State of Illinois: Journal American Medical Association, May 19, 1894.

[2] Dr. Bettman quotes from the report of the State Board of Public Charities for Illinois that, in addition to the regular census-returns for 1880, there was private correspondence with physicians, who added many names to the lists. This was not repeated in the last census.

Those who live to the age of seventy years and over have not, as a rule, the senile changes so marked as those who die at or about that age. The heart and bloodvessels in the very aged are generally in comparatively good condition. The brain and entire nervous system, as well as the special senses, remain fairly good. That certain atrophic and degenerative changes take place in all old people, which impair all the functions of the body, is plain to the most superficial observer. Bones become brittle, glands are lessened in size, fatty changes take place, calcareous deposits are found in various parts of the body, notably in the heart and bloodvessels, but these changes are not present in the same degree in all. In some the changes are very marked, in others moderately so. The former, of course, do not stand operations so well, owing to their inability to recover from the shock, which is the chief factor of danger in injuries to or operations upon the aged. The more marked the senile changes the more danger from shock.

It is a matter of general observation that old people while suffering from diseases or injuries or recovering from operations complain less of acute pain than do younger persons. This may be accounted for by the fact that certain changes have taken place in their nervous systems which tend to make sensation less acute. They are thus saved from fretting, a fact that facilitates recovery. Nervous affections of any kind are not usual complications in the aged, and acute inflammatory troubles are not to be apprehended. It is rare also that they suffer from secondary hemorrhage. The chief points to be considered by the surgeon in making a favorable prognosis are a condition of fair general health, an hereditary tendency to long life, and the absence of very marked senile changes in the heart and bloodvessels.

Coincident with the senile changes found in the bodies of all old persons in a more or less marked degree it is found that the cells, though diminished in size, retain their physiologic characteristics, and respond to the demands made upon them for the repair of an injury or wound as certainly as in the young, though usually more slowly. This faculty in the cells to undergo all the changes necessary to repair a wound or injury accounts for the many good results following operations on old people.

The following cases, which have come under my observation since 1891, the date of my paper on "Old Age as a Factor in Surgery,"[1] may be of interest:

CASE I.—J. W., aged seventy-six years, came under my observation at the Freedmen's Hospital in the spring of 1891, suffering from epithelioma of the penis, which had destroyed the prepuce and the greater portion of the glans, and extended along the dorsum and left side of the organ to about its middle. I amputated the penis an inch from the pubes, leaving the urethra long, splitting it and stitching the two halves to the skin above and below. The location of the wound necessitated daily dressing. The wound healed partly by first intention and partly by granulation, and the patient was discharged from the hospital in five weeks, though he was comfortable and able to be about the ward and grounds after the second week. There has been no return of the disease.

CASE II.—M. S., aged eighty-four years, came under my care in June, 1891, with a strangulated hernia. Careful taxis was tried, with the aid of ether, cold and heat and position, without success. The man suffered much from nausea and vomiting, and was greatly depressed. Herniotomy was performed, with the result of what seemed at the time to be a radical cure. Two years afterward a protrusion appeared, which was controlled by a truss. Recovery in this case was slow but satisfactory. The patient was confined to bed for five weeks, after which time he was able to be up and about, and regained his usual activity. He had been a robust man all his life, and had never before suffered from any serious illness.

CASE III.—J P. was eighty-six years of age. In December, 1891, while making his way about a dark room, he tripped and fell, fracturing the neck of the right femur within the capsule. The condition was easily made out, as the man was very spare. The displacement was but slight, and the shortening less than an inch. The treatment was by sand-bags to the outer and inner sides of the limb, and a weight to the foot. The weight appeared to be so uncomfortable that it was removed in a few days. After six weeks in bed it was found that union had not taken place. After ten weeks he began to move around on crutches, and was able to do so until he died of old age, in the spring of 1894. He recovered entirely from the shock and the injury, and, although the bone failed to unite, he suffered no pain or discomfort after the first few days.

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[1] MEDICAL NEWS, February 1, 1891.

CASE IV.—Mrs. J., seventy-nine years of age, sustained a fracture of both bones of the right forearm, the result of a fall down-stairs. When called to see her, two hours after the injury, I found her suffering from shock. She was severely bruised about the right side and shoulder, in addition to the fracture. I administered stimulants and adjusted the fracture, applying two well-padded straight splints. She suffered but little pain after the first forty-eight hours. At the end of three weeks the wooden splints were replaced by a plaster dressing, which was allowed to remain for four weeks longer. The bones were then found firmly united in good position, and she had perfect use of the arm and hand.

CASE V.—D. H., aged seventy-nine years, while standing on the end of a packing-box, four feet high, lost his balance and fell to the ground, striking his left shoulder on a peg driven into the ground. The wooden pin penetrated the soft parts and opened the shoulder-joint, synovial fluid escaping freely. The opening was at the inner edge of the deltoid muscle. The man being very spare, a portion of the head of the humerus could be brought into view at the bottom of the wound. The patient suffered from the concussion of the fall, but rallied within two hours. In the meantime I had closed the wound and adjacent parts after thorough cleansing with sterilized water only. There was but little bleeding. I placed a deep stitch in the middle of the wound, including all the tissues to the depth of the torn capsular ligament, and taking in enough of the thickness of the ligament to insure bringing it together without leaving any of the thread in the joint. This single suture brought the slit, which was an inch-and-a-quarter long, quite neatly together. Two additional stitches securely closed the wound. The man recovered without an untoward symptom, and was at no time confined to his bed an entire day. There was no inflammation or suppuration, and the wound was fairly healed when the stitches were removed on the twelfth day. The joint was kept immovable for four weeks, when it was found that, although somewhat stiff, there was fair mobility, which increased from day to day, until at the end of ten weeks the arm was as good as ever.

CASE VI.—In February, 1892, Mr. E., aged eighty-three years, fractured the neck of the left femur as the result of a fall in the street. There was no particular shock. He was treated by sand-bags and a weight to the foot. As is so often the case, the discomfort of the weight was so great that it was removed in a few days. The limb shortened a little over an inch. He was kept in bed for eight weeks, when it was found that there was good union. Being an active man he was allowed to go about on crutches. This he did for some months, when he abandoned them, and now uses only a cane. Though he has a perceptible limp, he walks well and is in good health.

CASE VII.—W. G., aged seventy-nine years, came under my care in January, 1892, suffering from severe concussion of the brain and spine. He had been struck by a rapidly moving coasting sled, which threw him with great violence to the frozen ground. He was picked up in an unconscious condition. Two ribs were broken, and blood flowed from the nose and ears. I believe there was fracture of the skull without depression. He recovered consciousness in twelve hours, but the intellect was confused and dull for a number of days. The ribs united without difficulty in six weeks, and he so far recovered from the injury to the brain and spine as to be able to resume his work as a clerk in about three months. He died in May, 1894, of cholera morbus.

CASE VIII.—Mrs. J. G., aged eighty-three years, had suffered for eight years from scrofuloderma of both feet and legs, extending to the knees. In August, 1894, she got out of bed, after midnight, for the purpose of getting a drink of water. She was seized with vertigo and fell backward, striking her head against a sharp, projecting hinge-pin, which entered the scalp just above the occipital protuberance, causing a severe laceration. The cut extended over the occipital bone, ending at the middle of the junction of the parietal bones, and making a ragged, comparatively straight cut over four inches in length. At the same time the scalp on each side of the cut was completely separated from the skull in an elliptical shape, the greatest diameter of which was over four inches. There were considerable loss of blood and marked shock, from which it took her twelve hours to rally. The wound was cleansed and sutured, and a dry dressing applied. The wound healed entirely by first intention, without soreness or evidence of pus. The stitches were removed on the eleventh day, when it was found that union was good, so that no further support was required. The result was the more remarkable in that the woman was a confirmed victim of the opium-habit, besides suffering from the tubercular affection of the legs.

CASE IX.—Mrs. W., aged seventy years, came under my care in the winter of 1893, for a fracture of the right humerus, near the shoulder-joint, due to a fall from a carriage. The fracture was adjusted, and the arm placed in two felt-splints. The outer splint covered the top of the shoulder. She was not confined to bed at any time, and union was complete in seven weeks. The shoulder was stiff for some time, but she eventually recovered full use of the joint. There was no deformity.

CASE X.—In June, 1894, Mrs. M., aged seventy-three years, called my attention to a hard, slowly growing mass in the left breast, which I diagnosticated as carcinomatous. When she first noticed the growth it was painless, but later she suffered from lancinating pains, and the tumor made very perceptible growth from June to October, when I advised its removal, to which she readily assented. On November 21, 1894, I extirpated the breast and neighboring glands. She sat up on the third day. The dressing was removed for the first time on the tenth day, when the stitches were also taken out. The wound was found to be well healed. On the thirteenth day after operation she walked a block to my office. In this case the repair was as rapid and satisfactory as it could possibly have been in a young and robust person.

In operating on old people I believe a great advantage is gained in preventing shock by keeping the temperature of the operating-room high, so that the extremities and the field of operation are kept warm.

CASES OF POTT'S DISEASE OF THE SPINE PRESENTING SOME UNUSUAL NERVOUS SYMPTOMS.[1]

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THE ordinary nervous symptoms associated with spondylitis are so common that they do not merit more than passing attention. The pain in the back, chest, or abdomen, the peculiar respiration, the reflex muscular spasm, the weakness of the lower extremities, which may be followed by paraplegia and loss of power over the sphincters, are all symptoms and complications familiar to those who have seen many cases of Pott's disease. These nervous phenomena are quite easily explained by the pathologic conditions present, *e. g.*, the pain and muscular spasm, by irritation of the spinal nerves at their roots from pressure or inflammation, and the paraplegia by a pressure-myelitis. But occasionally symptoms arise out of the usual run that are not so easily explained.

Two such cases having come under my observation, I made a careful search of periodic literature for reports of similar ones, with the result of finding four that seemed to be remarkable and worthy of abstracting.

Two were reported in the *Glasgow Medical Journal* for 1886 by Gemmell, one occurring in his service at the Glasgow Hospital, and the other in the service of Dr. Middleton, who succeeded him. It is quite worthy of note that two such unusual and interesting cases should occur in the same hospital and within a few months of each other.

The first was in a child four years of age, who was sent to the hospital November 11, 1884, to be treated for "wry neck." On her admission a deformity of the upper dorsal vertebræ was observed. She was placed in bed and kept there, but no apparatus was applied. She remained in about the same condition as when she was admitted, and no unusual symptoms developed until June 26, 1885, seven months later, when she was seized with a violent paroxysm of dyspnea. The symptoms were so urgent that it was thought a foreign body had lodged in the larynx; but a careful examination by sight and touch failed to reveal its presence. Ether was administered and poultices applied to the neck. Gradually the distressing symptoms passed away, but the breathing never became natural, and she had subsequent attacks of dyspnea, though not so severe as the first one. At no time was there any difficulty in swallowing or paralysis of the larynx.

On July 12th the patient died, apparently from asthenia. The autopsy showed that the lungs, heart, and trachea were perfectly healthy. There was an abscess at the site of the third, fourth, and fifth dorsal vertebræ, containing considerable pus, but it did not project forward. There was no evidence of inflammation around the abscess, and the cord showed no material change in structure.

The second case, in a child of three years, was brought to the same hospital for "bronchitis" June 30, 1885. According to the history, the child had been feeling ill since the previous March, when he began to hang his head toward the left shoulder, and at the same time the "bend in the neck was discovered."

The pulmonary symptoms had appeared six weeks before admission, and it was reported that on several occasions he had been "choked up."

This child was also placed in bed, with no support, and nothing special was noted until early in September, when the breathing became croupy. Steaming and hot poultices were employed, with relief. On September 12th he had a more severe attack, which was again relieved by external applications; but on September 17th the dyspnea was so great that tracheotomy was performed. The child lived about one minute after the trachea was opened. In this case also there had been no difficulty in swallowing and no paralysis.

The autopsy showed a prevertebral abscess of the third, fourth, and fifth dorsal vertebræ. There was some compression of the cord, but no definite lesion.

I desire to call particular attention to the fact that both of these cases were treated without apparatus to fix the spine or support the head. The only treatment was the recumbent position, which, in a child of three or four years of age, amounts to no treatment. In the reports of these cases no attempt was made to explain the symptoms which had been present.

Faucon and Lavarand, of Lille, report a case in the *Lille Journal* for August, 1892, of a girl with disease high up in the cervical region, who had asphyctic seizures daily to the point of cyanosis. They applied a plaster jacket with a jury-mast, which relieved the symptoms at once, and the patient ultimately was cured.

A peculiar case of somewhat different character is reported by Hun in THE MEDICAL NEWS, vol. liii, page 90. An adult, thirty-four years of age, with Pott's disease located in the second, third, and fourth dorsal vertebræ, developed paraplegia. Exaggerated tendon-reflexes and ankle-clonus were present, with no loss of sensation in the lower limbs, while in the upper extremities there were symptoms of locomotor ataxia. The anesthesia, analgesia, and inability to coördinate the muscles were well marked and progressive. Unfortunately, this patient moved away, and the subsequent history was not obtained.

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[1] Read before the Orthopedic Section of the New York Academy of Medicine, November 16, 1894.

The following cases came under my own observation:

P. S., twenty-eight years of age, a farmer, came to the New York Orthopedic Dispensary and Hospital, November 2, 1883. He had always been in good health up to one year before, and his family history was good, being free from all tuberculous taint. About one year previous to presenting himself he had quite a severe fall, striking upon his back. After a time he recovered sufficiently to perform his usual duties on the farm, but the back "never felt quite right." In the following June he attempted to lift a heavy hay-rack off a wagon, and strained his back severely. From that time he had more pain, so that it was difficult for him to ride or do hard work. In August he again lifted and strained the back, but not so severely as before. Within a few days he was attacked with violent pain in the back, shooting downward and forward along the course of the ureters and extending into the testicles. The pain was accompanied by scanty urine, and on several occasions hematuria was present. He was confined to the bed, and his symptoms so strongly resembled renal colic that he was treated for that trouble; but a careful examination of the urine failed to reveal any deposit or calculus. Six weeks of rest in the recumbent position so relieved him that he was able to get up. Soon the pain returned, not so severely as before, but of the same character, radiating down into the testicles. The hematuria did not return. He learned to hold himself in such a position that there was as little motion of the spine as possible, but was unable to continue his work. About this time he was seen by my friend, Dr. Egbert Le Fevre, and advised to come to New York for treatment. The examination of the patient showed rigidity of the spine in the lumbar region, with slight projection of the third vertebra. A diagnosis of Pott's disease was made and a Taylor spinal support was applied. This gave immediate relief, and he was comfortable as long as the support fitted properly. When it needed adjustment the pain in the testicle would return. The peculiar nervous symptoms in this case were the unusual location of the pain, the scanty urine, and the hematuria.

After wearing the brace for three years it was removed, and he has remained well ever since, doing the hard work on a farm.

J. F., thirty-one years of age, employed in a large machine-works, had always been in good health until February, 1890. On the 22d of that month he was assisting in the operation of lifting a heavy casting on top of a boiler. He slipped and fell, striking his back on the rounded surface of the boiler, and part of the weight of the casting fell across his pelvis. He fainted at the time, but upon recovery from that was able to be taken to his home, walking part of the way with assistance. He remained in bed for three weeks, and was treated for severe contusions. At the end of that period he was able to get up and went to the works, but did little more than to sit in a chair and direct the men. Three months after the injury both testicles became swollen and painful without cause. The left one was the worse, and finally suppurated, discharging considerable pus. A slight discharge continued for six months, and the swelling did not disappear for a year. He wore a suspensory-bandage, but was not confined to the bed. During this period he suffered from pain in the back, and if he made a misstep, or if any one seized him by the shoulder so as to give him a twist, it would bring on pain severe enough to cause him to faint. He consulted a number of physicians, and for nearly a year before I saw him had been treated at one of the large city hospitals for lumbago. In October, 1893, he began to have attacks of dyspnea, resembling spasmodic asthma. These came on at night, and were so severe that he was deprived of sleep, and was often obliged to sit up all night. The breathing became labored, even in the daytime, and soon a marked hoarseness appeared. As a result of this loss of sleep and worry he became emaciated and was very miserable. The ordinary remedies for asthma were tried faithfully by his physician without any benefit, and he was brought to my friend, Dr. Le Fevre, for consultation. The peculiarity of the breathing, and the absence of the usual signs of asthma, directed the attention to the upper air-passages. There was no history of obstruction or paralysis in the larynx; so he suspected a reflex cause. An examination of the back revealed a projection in the lumbar region, and the case was referred to me for treatment. The signs of lumbar Pott's disease were well marked, and I applied a Taylor support, supplemented by a strong corset. This gave him great relief, and after its application he had only one asthmatic attack. The breathing became easier, the hoarseness disappeared, and his general health improved. When I presented him to the Section in February he had gained thirty pounds, and was doing his ordinary work.

Though cautioned to be very careful about lifting, and advised to be regular in attendance, to keep the brace properly adjusted, he felt so much better that he became careless. He frequently lifted heavy weights, indulged somewhat in dissipation, in consequence of which he received a severe fall, and became irregular in his attendance. The result was that he came to see me in April with the report that he was nearly as bad as before. There was a slight increase in the kyphosis. After adjusting the brace I sent him into the country, where he could rest, and the result was that in a few weeks he was much better. I saw him during the latter part of the summer, when he was at work again. He promised to do no lifting and to be careful of his habits, and, as I have not heard from him since, assume he must be in fair condition.

That his asthmatic seizures, dyspnea, and hoarseness were dependent upon the spinal lesion seems evident from the fact that they were not like true asthma, that they improved at once under efficient support to the spine, returned again when the back was neglected, and again disappeared under rest and support.

The explanation of these cases is, of course, largely theoretic. We have a definite and well-known pathologic lesion, but with it symptoms out of the usual run which cannot be explained as a direct consequence of the lesion. The epigastric pain, the paraplegia, and other nervous symptoms have their explanation in the lesion. My own belief is that we must look to the sympathetic system, and regard them as reflex phenomena. Just why a certain number of cases, the disease being located in different regions, should be affected in this way, it is impossible to say. But it is no more strange than that a certain number of pregnant women should suffer from uncontrollable vomiting, while others pass through the whole period with no disturbance of the digestive organs. In certain people a slight attack of indigestion will bring on a severe attack of asthma, and some women are warned that conception has taken place by a peculiar hoarseness which comes on much earlier than the usual signs of pregnancy.

In those cases in which an autopsy was made there appeared to be no change in the cord. It is probable, therefore, that the source of irritation was at the roots of the spinal nerves.

Although the explanation of the symptoms occurring in the cases I have described may be theoretic, there are two practical points that may be learned from them. The first is that it is possible to have peculiar symptoms dependent upon a lesion of the spinal column, and the true nature of the trouble can easily be overlooked. The second is the importance of an early and efficient support to the spine as soon as the diagnosis is made.

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FRACTURE OF THE LARYNX, WITH REPORT OF A CASE.[1]

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ASSISTANT SURGEON MANHATTAN EYE AND EAR HOSPITAL; INSTRUCTOR ON DISEASES OF THE THROAT, NEW YORK POST-GRADUATE SCHOOL AND HOSPITAL; FELLOW OF THE ACADEMY OF MEDICINE.

The following case is reported because the condition is exceedingly rare and the cause in this instance is very unique.

Up to 1866 little or nothing was known about fracture of the larynx. At that time Hunt was able to collect only twenty-nine cases. Two years later Henecque reported fifty-two more. A careful examination of the files since Durham, in 1881, wrote his paper and brought the number of reported cases up to sixty-two, has enabled me to add thirty more, including the present case.

These thirty cases, together with accompanying data as regards the reporter, cause, symptoms, treatment, and result, are given in table on opposite page.

Strange as it may seem, in the face of these statistics, Lane, of London, in 1885, in a classic paper, showed, in 100 cases examined in the autopsy-room, 9 per cent. of fractures of the larynx.

Causes. The causes of fracture of the larynx are most numerous and varied. While they are in most cases direct, there are a number of cases reported by von Hoffman, of Vienna, in which the cause was entirely indirect. In 43 cases reported by Guert, 14 were caused by strangling, 8 by blows on the neck, and by some foreign body striking the neck.

Symptoms. The symptoms are very characteristic—pain, aphonia, and dysphagia, and in all the well-defined cases dyspnea, bloody expectoration, and emphysema. The dyspnea and emphysema are generally excessive, the latter sometimes involving the entire body. Crepitus and deformity are not constant, probably on account of the emphysema present. When a view of the larynx could be obtained with the mirror, the false bands were reported to be swollen to an excessive degree, causing virtual stenosis of the glottis. Cough is also a common accompanying symptom.

Prognosis.—Fracture of the larynx has always been regarded as a very fatal disorder.

In Durham's 62 cases there was a mortality of 88 per cent.; Albert found a mortality of 80 per cent.; Fisher, in 71 cases, a mortality of 78 per cent.; and Guert in 68 cases, 70 per cent.

Fractures of the thyroid are most common, and are regarded as most favorable for recovery. All authorities in the past have agreed that fractures of the cricoid are without exception fatal.

In the 30 cases collected in this paper the statistics are much more favorable. The total death-rate was only 30 per cent. for fractures of all kinds. Still more encouraging is the fact that in the 30 cases there are 5 cases of fracture of the cricoid, with recovery in 4, or 80 per cent., and 5 cases of multiple fracture (thyroid and cricoid), with recovery in 2, or 40 per cent. The remaining 20 cases consisted of 19 cases of fracture of the thyroid, with recovery in 80 per cent., and one case of fracture of the hyoid resulting in death.

These results are in direct correspondence with the assertion of Lane, who insists that the death-rate has been greatly over-estimated.

Among these 30 cases, instead of the clinical picture of great dyspnea and emphysema, there are, including the present case, 6 cases in which the patient presented himself for some resulting disorder a considerable time afterward, one reported by Morgenthau, 3 weeks later, for hoarseness; Barling's case, 6 days later, for hoarseness; Masucci's 8 days later, and two cases reported by Sajous, in

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[1] Read before the Section on Laryngology of the New York Academy of Medicine, November 28, 1894.

No.	Reporter.	Cause.	Prominent symptoms.	Cartilage.	Treatment.	Result.	Reference.
1	Heymann,	Fall	Some pain; could work.	Cricoid	Anodyne	Recovery	Arch. int. de Laryng., 1892, pp. 290–293
2	Scheier,	Direct (horse)	Dyspnea; bloody sputum; crepitation; cough.	Thyroid	Tracheotomy	Recovery	Deut. med. Woch., 1892, p. 265.
3	Taylor,	Fall	Dyspnea; bloody sputum; aphonia; pain.	Thyroid	Anodyne	Recovery	Times and Reg., 1893, p. 386.
4	Briddon,	Struck on head	Dyspnea; bloody sputum; aphonia; pain.	Thyroid	Tracheotomy	Recovery	New York Med. Journ., 1891, p. 433
5	Morgenthau,	Struck on head	Cough; aphonia and swelling; came to clinic three months later for hoarseness; crepitus.	Thyroid	Anodyne	Recovery	Journ. Amer. Med.Assoc., 1891, p. 544.
6	Landgraf,	Direct	Emphysema; dyspnea; bloody expectoration.	Thyroid	Anodyne	Death	Fred. Bl. für Gericht.Med., 1888, pp. 56–64
7	Fussell,	Base-ball	Emphysema; dyspnea; bloody expectoration.	Thyroid	Tracheotomy	Death	Med. News, 1888, p. 288.
8	Nankiville,	Direct	Emphysema; dyspnea; bloody expectoration.	Thyroid	Tracheotomy	Death	Lancet, 1888, p. 418.
9	Guilliot,	Direct	Emphysema; dyspnea; bloody expectoration.	Thyroid	Anodyne	Recovery	Union Méd., 1888, p. 146.
10	Sokolowski,	Direct	Emphysema; dyspnea; bloody expectoration.	Multiple	Tracheotomy	Recovery	Journal of Laryng., 1884, p. 367.
11	Desvernine,	Direct	Pain; bloody sputum; no emphysema or dyspnea till later.	Multiple	Tracheotomy	Recovery	Ann. des Mal. d'Oreille, 1890, p. 672.
12	Murray,	Direct	Emphysema; dyspnea.	Multiple	Anodyne	Death (18 hrs.)	Trans. Path. Soc., Lond., 1889, p. 36.
13	Barling.	Direct	Came to hospital six days later for hoarseness; crepitus.	Thyroid	Anodyne	Recovery	Birming. Med. Rev., 1890, p. 14.
14	Atherton,	Direct	Emphysema; dyspnea.	Thyroid	Tracheotomy	Recovery	Canad. Pract., 1887, p.355.
15	Major,	Direct	....	Cricoid	Tracheotomy	Recovery	Med. Chir. Presse, Pest, 1889, p. 246.
16	Clarac,	Direct	....	Cricoid	Anodyne	Death (3d day)	Gaz. de Hop., 1890, pp. 1019–22.
17	Manby,	Direct	Emphysema; bloody sputum.	Thyroid	Tracheotomy	Recovery	Lancet, 1886, p. 63.
18	Lane,	Direct	For a few minutes choking sensation; aphonia for 24 hours.	Thyroid	Anodyne	Recovery	Trans. Clin. Soc. Lond., 1885, p. 35.
19	Treulier,	Direct	Mentioned by Lokolowski, loc. cit.	Cricoid	Tracheotomy	Recovery	
20	Masucci,	Direct	Emphysema; dyspnea; came to clinic eight days later.	Cricoid	Anodyne	Recovery	Arch. de Mal. de Larynx, 1881, p. 108.
21	Turner,	Direct	Suppuration in neck.	Hyoid	....	Death	Trans. Path. Soc., 1885, p. 94.
22	Sajous,	....	Unconscious; emphysema; pain; aphonia.	Thyroid	Anodyne	Recovery	Med. and Surg. Reporter, 1883, p. 63.
23	Sajous,	Violent coughing	Came to clinic two years later for subacute laryngitis.	Thyroid	Anodyne	Recovery	Med. and Surg. Reporter, 1883, p. 63.
24	Sajous,	Kick by horse	Dyspnea for one week; came to clinic several months later for chronic laryngitis.	Thyroid	Anodyne	Recovery	Med. and Surg. Reporter, 1883, p. 63.
25	Tilgien,	Blow	....	Multiple	Anodyne	Death (24 hrs.)	
26	van der Hoeven,	Throttling	....	Thyroid	Anodyne	Recovery	Genusk Courant, 1891, No. 5.
27	Jean Maire,	Fall	....	Multiple	Anodyne	Death	Arch. de Méd. et Ph., 1890, p. 20.
28	Hektoen,	Fall	Edema of glottis.	Thyroid	Anodyne	Death	Med. and Surg. Report, Cook Co. Hosp., 1890, pp. 94–96.
29	Marugney,	Run over by train	....	Thyroid	Tracheotomy	Recovery	Bull. Soc. Méd. Prat. de Paris, 1886, p. 137.

which the injury occurred some time previously, and the only complaints were those of the laryngitis. It is hard to reconcile this great variance in the severity of the symptoms unless it is, as Sajous suggests, that in these cases, with such slight disorder attendant, the fracture was incomplete, and that when only the upper part of the thyroid is involved and the lower part spared violent symptoms will be absent, and radical interference is uncalled for.

Treatment. As regards treatment, Hunt asserts that he has never heard of a case in which emphysema and bloody sputum were present in which recovery took place without tracheotomy. All authorities advise tracheotomy when urgent symptoms exist. Recently the opening of the larynx and coaptation of the fragments have been suggested, also the introduction of O'Dwyer's tube. The statistics in the 30 cases studied are, accordingly, of interest in this relation. Of the 30, tracheotomy or laryngotomy was practised in 11, or in 36 per cent. In 19, or 64 per cent., it was not performed. In the 11 cases in which tracheotomy was practised death resulted in 2, or 18 per cent. In the 19 cases in which tracheotomy was not practised death resulted in 7, or 30 per cent. In the latter list there are 11 cases of thyroid fracture, with only 2 deaths, or but 18 per cent., and 3 cases of fracture of the cricoid, with death in 1 case, or 33 per cent.

The history of the present case is interesting, in reference both to its etiology and its course. Briefly it is as follows:

O. H., aged forty-four years, a musician by profession, was a member of the United States Band at West Point. All evidences or history of constitutional disease are lacking. The man states that for some time previous to the accident he had been compelled to play eleven different musical instruments. Three years ago, in October, while playing the baritone, an instrument akin to the trombone, he suddenly felt a pain in the right side of his neck, which was accompanied by a great amount of swelling, extending to the right ear. Coincidently there were loss of voice and dysphagia. At the same time he detected much pliability in the bones in his neck. Dyspnea resulted at once. The patient was never deaf previous to this accident; but since then there has at times been a discharge from both ears, especially the left, with great deafness. Two months later headaches began, which have been persistent and very distressing ever since. Cough has been a persistent symptom. The swelling continued for over a year, gradually subsiding. The patient was referred to me by my friend Dr. Reynolds, United States Army, and I saw him for the first time one year ago this present month.

During the past year the condition has in no essential particular changed. The man's chief complaint is from the severe persistent headaches, situated chiefly in the occipital region, and aggravated by pressure on the larynx. Since the accident dyspnea has persisted, and no later than last night, he states, his wife was alarmed on account of his great difficulty in breathing. There has been an almost total inability to swallow solids. The larynx also is painful at times.

Examination externally shows an excessive amount of mobility of the thyroid. Although not absent, the pomum Adami is not clearly defined. Immediately on grasping the thyroid the patient experiences pain on the right side.

The fingers pushed under the right ala at its upper border can detect a distinct crepitus when the patient swallows, while he states that he feels a marked rubbing of the two bones in the act. Pain is also produced when the cornu of the hyoid bone on the right side is grasped. Examination of the larynx with the mirror reveals nothing beyond signs of a chronic inflammation, although the false bands have always been rather acutely swollen. Examination of the left ear gives:

Watch . . .	= 0	a.c ; b ċ. M. T. sunken.
Tuning Fork . .	C	3/3
R . .	C^{ii}	3/3
. .	C^{iii}	5/3
. .	C^{iv}	5/7

Although I have repeatedly examined the patient, I have never been certain how extensive was the injury. The most probable condition is one of fracture of the superior cornu of the thyroid on the right side, with loss of function of the right lateral thyro-hyoid ligament. Whether there has been any associated injury of the cornu of the hyoid, it is at this late date scarcely possible to determine definitely.

TEXAS TYPHOID OR THE SO-CALLED TYPHO-MALARIAL OR SLOW FEVER.

BY J. ESTILL MILLER, M.D.,
OF LOCKHART, TEXAS.

THERE has been a great deal of doubt whether the fever which has been raging in the southern portion of Texas is typho-malarial, typhoid, or a separate and distinct type, called by some "slow fever."

During this epidemic I have treated 46 cases of this fever, and have carefully noted the symptoms in every case from the beginning to the end. I shall endeavor in this article to give the history and symptoms of the fever, so that the reader may draw his own conclusions as to whether this is true enteric fever or a separate and distinct type of disease.

The disease often runs through an entire family, attacking successively one after another, rarely two at the same time. There is usually a short prodromal period of headache, and a feeling of malaise; in about one-half of the cases there is loss of appetite, whilst in another portion the appetite is preserved throughout the entire disease, the patient often becoming hard to control because of his great desire for food. There is always an indisposition to work. The tongue in the beginning has a mottled or freckled appearance along the anterior portion of the dorsum, with red margins, and often with a triangular red spot at the tip. The papillæ are slightly elevated; on the posterior portion of the dorsum there is a whitish-yellow, furrowed coat. Later in the disease the tongue often becomes dry, and is protruded with difficulty; the coat now becomes brown, or cleans off in flakes, leaving a bright-red surface.

There are always gurgling and tenderness in the right iliac region on pressure; borborygmi and obstipation are often present from the beginning. Thirty of my cases were constipated; the others began with a slight diarrhea. If the patient does not receive the proper diet and treatment, there will be tympanites and a low muttering delirium. The stools are dark and very offensive at first, gradually assuming the "pea-soup" characteristics.

Among the nervous phenomena are flushing of the cheeks, often one and then the other, and slight delirium, the patient declaring that he is freezing when the fever is the highest, etc. I saw one patient with Dr. Coopwood in which the teeth chattered and the patient could not control the lower jaw. The hands and feet are nearly always cold at some stage of the disease, and may remain so for days.

The pulse in the beginning is often dicrotic; otherwise there is no material change, except when the patient is very weak or there is hemorrhage. The frequency increases in proportion to the fever-height. The temperature has the characteristic typhoid curve, beginning low and gradually increasing, until between 103.5° and 105° in the evening and 101.5° and 103° in the morning is reached; this continues until the turning-point is reached, when it falls in the same curve. During convalescence there are slight exacerbations of temperature, finally leaving the patient entirely free from fever. In the beginning or first stage the fever is very hard to control, and can only be reduced after prolonged bathing, often requiring from thirty to sixty minutes' sponging in cold water; in fifteen minutes after discontinuing the bath temperature is at its former height. Quinin, except in antipyretic doses, has no beneficial effect upon this fever.

The spleen is always enlarged, and in some cases the liver also.

The duration of the disease is variable, running from thirteen to forty-five days; most of my cases continued from fifteen to twenty-one days.

This fever differs from typhoid in the absence of the rose-spots. I have examined carefully in every case, and I have *never* succeeded in finding these spots on any portion of the body or extremities at any period of the disease. Among the forty-six cases, I had one in which there was hemorrhage from the bowels. None had nose-bleed or perforation.

I had two cases in the same family, occurring simultaneously, one sister, eighteen years old, the other twenty. The latter pursued a typical course, except that during convalescence she had furunculosis. The former after two or three days' treatment seemed to recover, and, although I cautioned her to continue the treatment, she did not heed my warning, and in from ten to twelve days she was again attacked with the fever, which ran a very severe course, lasting twenty-seven days; during her convalescence she also had a skin-eruption, which resembled varicella.

My friend Dr. C. B. Coopwood was kind enough to furnish me with the following report, based on eighty-four cases treated by himself during the epidemic:

At no stage of the disease did he find the "rose-spots" on any of his patients, although he looked carefully for them. None of his cases had *nose-bleed;* five had hemorrhage from the bowels, two had perforation. In one of the latter cases he and Dr. Chambers held a post-mortem examination, with the following results: The Peyer's patches were found ulcerated opposite the insertion of the mesentery, with typical typhoid ulcers. In the bottom of two of these was found a slit-like perforation. The symptomatology in this case did not differ from that in the other eighty-three cases, except if anything it was a little milder.

The mortality is about the same as is laid down in most of our recent text-books as that of typhoid fever. Dr. Coopwood tells me that he lost five patients out of eighty-four, and I lost one out of forty-five cases.

Our treatment is about the same as recommended by Dr. Yeo at the International Medical Congress at Rome, minus the quinin. Such conditions as those I have outlined need no comment, and prove conclusively to my mind that the time-honored rose-spots and nose-bled are not the necessary accompaniments of true enteric or typhoid fever.

CLINICAL LECTURE.

PARALYSIS OF THE FACIAL NERVE; NEURALGIA OF SUPERIOR MAXILLARY NERVE.

[Clinic at the Buffalo General Hospital.]

By ROSWELL PARK, A.M., M.D.,
PROFESSOR OF SURGERY IN THE UNIVERSITY OF BUFFALO.

Here is a man who came to this city expecting to have a very severe operation performed. He returns without it, happier in mind and somewhat relieved in body. You may remember that in the last year I have twice removed the Gasserian ganglion to relieve intense facial neuralgia. From reading the report of one of these operations, an out-of-town physician sent me this patient. I expected to find a man haggard and worn by suffering, reduced in flesh, with the facial appearance of suffering, perhaps with spasm of the face. The patient, however, showed none of these appearances. He occasionally puts his hand to his face, not to relieve a paroxysm of pain, but to cover the right eye from the glare of the light, as it is exposed on account of a paralysis of the orbicularis. On asking him to show his teeth, only the left side of the mouth moves. The tongue is fairly well protruded, as it is only slightly affected. There is some complaint of pain, but not to the extent which I expected. He has a facial paralysis with a certain amount of referred pain due to exposure of branches of the fifth nerve, especially in the conjunctiva and cornea, because they are not protected from dust. This trouble came on by degrees about eighteen months ago.

The patient is a man, aged fifty-one years, a miner, apparently of steady habits. We can get no account of alcoholic excess or of syphilis. Even tobacco has been used very moderately.

Having decided that this is a case of facial paralysis, the next question is to find the lesion. There is a slight impediment to speech, and the voice wavers a little, as if there was some involvement of the glosso-pharyngeal nerve, as well as the seventh. Pain is felt also in the tongue. To explain the joint affection of these nerves we must remember that their nuclei are very close together at the base of the brain in the pons. If we can suppose a lesion that involves decidedly the origin of one nerve and extends somewhat to the origin of the other, we can explain the trouble very well. We cannot explain the symptoms as due to pressure or injury in their passage through the skull, for the nerves do not issue through the same foramen. The gradual development points to a slow degeneration of nerve-tissue. There is neither the constant headache nor the retinitis which indicates brain-tumor. There is no complaint of pain on manipulating the face nor on pressing over the exits of the supra-orbital, infra-orbital, and other branches of the fifth nerve; hence there is no reason for considering the trouble neuralgic. Without making a positive diagnosis, I believe the trouble to be some form of degeneration in the nerves, progressing outward from the nuclei.

There is no indication for operation. I have suggested that the eyelid be kept closed by a little piece of adhesive plaster, and have recommended faradization of the face to retain what little activity remains. If the condition be a true degeneration, there is not much hope of ultimate recovery; but I prefer giving the patient the benefit of the doubt, and keeping the muscles in as good tone as possible. Purely empirically, I have suggested the administration of potassium iodid.

In contrast with this case of paralysis, here is one of true neuralgia in a man of about the same age—fifty-five years. He is a hard-working man, a day-laborer, and he tells me that some months ago he had a tooth pulled which had been paining him. All the teeth are now gone from that side of his jaw, so that I cannot tell which tooth was the offender. However, on questioning him further, I learn that the same pain has persisted since the removal of the tooth, so that I question whether his trouble was not rather a neuralgia due to other cause than to ordinary dental caries. The pain is felt particularly in the jaw, but also over the side of the face below the eye. Thus, only the second division of the fifth nerve is affected. The pain goes around nearly to the ear, and is felt particularly over the antrum, so that I infer that the whole of the second division is affected, but that the trouble is more pronounced in the infra-orbital branch. Although the pain is constant, it is subject to exacerbations of the nature of tic douloureux. I have told the patient that the nerve affected may be removed entirely; that if the neuralgia be peripheral in origin, the cure will be complete. On the other hand, it is possible that the trouble is central in origin, and, in that case, the operation will not afford relief. The history of facial neuralgia shows that it may be operated upon again and again. One may read of cases in which the nerve has been divided at its exit from the mental foramen, then along the ramus of the jaw in the mouth, by Pancoast's operation, with relief for a year or two, and later a return of the trouble, so that the jaw has been resected and the nerve torn from its channel. Still later a more radical operation may have been necessary.

In this instance, I shall attack simply the infra-orbital nerve, which is very easily found. It comes out of the infra-orbital foramen along with the artery, a little vein entering at the same place. The foramen is nearly half-way between the two canthi. The incision is made longitudinally. Having found the nerve, I pull it out and divide it as far up as possible. The second division of the fifth nerve descends through the foramen ovale, comes out through the spheno-maxillary fossa, and then runs in the infra-orbital canal or trench. Sometimes the course of the nerve is almost within the orbit, sometimes more in the antrum. One never knows until the nerve is exposed just what course it takes. It is possible, however, to lift up the eye and chisel through the bony covering of the conduit, then pull out the nerve and divide it well back toward the spheno-maxillary fossa.

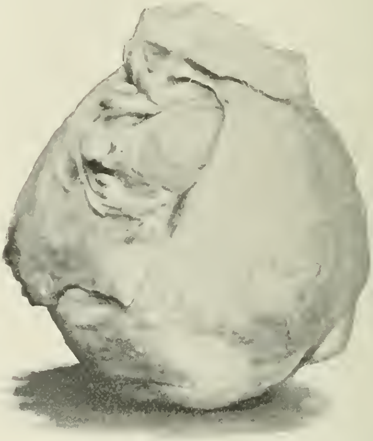
This man showed on the cheek over the infra-orbital foramen a scar. If it were not that this antedated by many years the beginning of his neuralgia, I should attribute the trouble to an entanglement of small branches of the nerve in the cicatricial tissue.

PATHOLOGIC NOTE.

A RARE DERMOID.

BY S C. GRAVES, M.D.,
OF GRAND RAPIDS, MICH.,
VISITING SURGEON TO THE U. B. A. HOSPITAL AND TO THE CHILDREN'S HOME.

THINKING that a cut and description of a very peculiar dermoid might prove a matter of interest to the readers of THE MEDICAL NEWS, I take pleasure in forwarding the same.



The peculiar feature of this tumor, as can be readily seen, is the very evident attempt on the part of a bit of sequestrated skin to form a portion of a human being. The left side of a human face is clearly intended.

The sequestration-theory of dermoid-genesis is the one, I believe, now generally accepted by investigators. At least Sutton, in his late work, *Tumors: Innocent and Malignant*, published October, 1893, announces this view. Tillmann's *Surgical Pathology*, published 1894, also accepts the same view.

The following is a description of the tumor by Dr. William Fuller, of this city, who has given the growth careful study:

In this dermoid cyst, there is developed a well-marked eye, with a molar tooth in the situation of the cornea. The palpebræ are distinctly developed, with cilia on the margins. The outer canthus is united, while the inner is incomplete, the internal extremity of each lid terminating in a cartilaginous prominence. Behind the eye is a roundish, irregular bone (sphenoid?), having a foramen (optic?) in the center, from which springs the apex of a fascia, conical in shape, the base expanding to receive the undeveloped globe of the eye. Above the eye are two triangular bones (frontal?) with a cleft between them (frontal suture?). These bones join together below in front and articulate with a bone (nasal?) which extends downward for one-half an inch, and is continued by a cartilage (nasal septum?), from the side of which springs a well-marked ala, enclosing a nostril about one-quarter of an inch in depth.

Below the nostril is an upper lip, having a well-marked dermoid appearance above and abruptly bounded by mucous membrane below. A mat of blond hair, mixed with dermoid matter (sebum), springs out of a depression above the frontal bone, while the eyelashes are black.

A white cord runs obliquely outward and upward along the lower margin of the frontal bone (or vital ligament?) Beneath and parallel to it is a streak of muscular tissue (levator palpebræ sup.). The cheek has the appearance of skin, with a few velvet hairs near the upper lip.

The Fallopian tube and broad ligament formed the pedicle of the tumor, the major part of which is a cyst that contained a greenish limpid fluid, of a salty taste, and is lined by a serous membrane. The cyst-wall is composed of two membranes with intervening cellular tissue. The bloodvessels of the cyst are long and delicate, indicating its rapid growth. The weight of the tumor is three pounds.

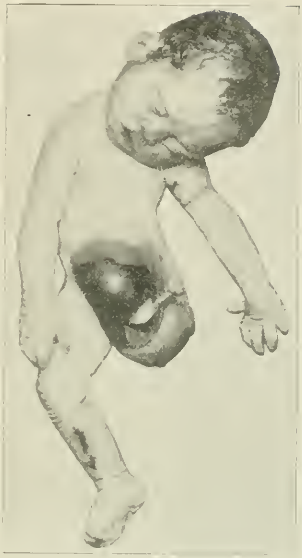
The tumor here described was obtained from a patient of Dr. J. O. Edie, a woman twenty-two years of age, married, who had one child, two years old, and who was operated on at the U. B. A. Hospital, November 12, 1894. The cast was prepared by Dr. William Fuller.

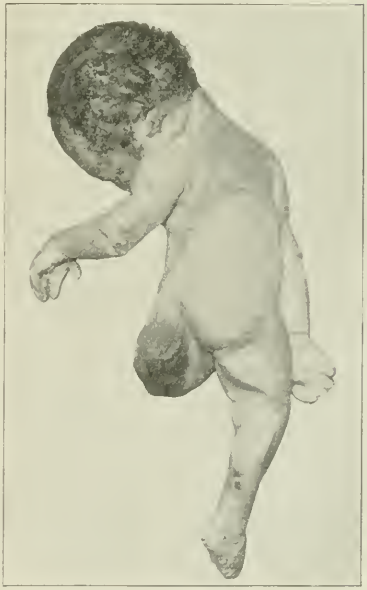
TERATOLOGIC NOTE.

A SPECIMEN OF DEFECTIVE DEVELOPMENT OF THE ABDOMINAL WALL AND EVENTRATION, CYLLOSOMA.

Presented to the Wistar Museum by Dr. I. Leopold, of Philadelphia.

Reported by B. C. HIRST, M.D.,
of Philadelphia,
Professor of Obstetrics in the University of Pennsylvania.





When defects of the abdominal wall are situated more to one side than another the corresponding lower limb is rudimentary or absent. The protrusion of abdominal contents, especially of the liver, on this side looks a little like the rudiment of the absent limb, as may be seen in the photographs, but a slight examination shows the true character of the tumor. The external genitals, the urethra, and the anus are commonly absent. In cyllosoma (Geoffroy Saint-Hilaire) the lateral eventration is on the left side in 72 per cent. of the cases (35 out of 48), and the vast majority of the infants are females.

The history of Dr. Leopold's patient accounts in no way for the deformity of the infant. The woman was a healthy primipara, twenty years of age, and there had been nothing noteworthy during pregnancy, except an occasional discharge of blood at the menstrual periods.

MEDICAL PROGRESS.

Excision of a Sub cortical Tumor of the Brain.—Beevor and Ballance (*British Medical Journal*, No. 1775, p. 5) have reported the case of a woman, thirty-nine years old, in which for twelve months there had been progressive loss of power in the right lower extremity, and for seven months also in the right upper extremity. Four or five weeks before coming under observation speech was for three or four days stuttering and thick, and for three weeks tactile sensations were not properly localized on the affected side, while light touches were not felt at all.

At the time that speech became affected there occurred an attack of vomiting, associated with severe headache referred to the frontal region. The vomiting had recurred intermittently. No history of a definite fit or of giddiness could be obtained. Double optic neuritis had been observed for three weeks, and for one week there had been attacks of sudden pain of a hammering character on the left side of the head. The patient was fairly well nourished. The face was expressionless, and the mental state dull. There were no delusions, but the memory was poor. The temperature was rather subnormal, but equal on both sides. The pulse was 100. The movements of the right side of the face, exclusive of the eyes, were less brisk and rather weaker than those of the left side. The upper facial muscles acted quickly, as did also the muscles of mastication, and the tongue was protruded straight.

In walking the right leg was swung forward. Wrist-tap and knee-jerk were increased upon the right side, and ankle-clonus was present. The muscular sense was lost in the right upper extremity and in the right toes and ankle. There was diminished sensibility upon the right side below the level of the face.

Treatment with mercuric chlorid and potassium iodid was instituted, but the symptoms failed to improve. Operation was, therefore, proposed and acceded to. A large flap, shaped like an inverted U, was made upon the left side of the head, including the periosteum, and allowing of exposure of the coronal and sagittal sutures, about one inch of the posterior part of the left frontal bone, and practically the whole of the parietal bone, with the exception of the anterior inferior angle, and the part immediately adjacent to the lambdoid suture. A parallel square-shaped portion of bone, whose anterior and posterior borders ran parallel with each other and with the sulcus of Rolando, was marked out by means of a saw. The upper border corresponded with the sagittal suture and extended along it from the bregma for fully three-and-one-half inches. The lower border was parallel with the upper and two-and-one-half inches below it. The area thus outlined was divided into small quadrangular pieces by vertical and horizontal cuts of the saw. These pieces were then easily raised from the dura by an elevator. As soon as one piece had been removed the use of strong bone-cutting forceps facilitated the final separation and removal of the pieces into which the bone had been mapped out. Along the upper boundary of the opening into the skull the final removal of the bone was accomplished in part by disintegration at the sagittal suture. In this way the dura was exposed without injury, and the middle meningeal artery lay upon it without having been wounded. The dura bulged considerably into the opening into the skull.

As it was decided to perform the operation in two stages, the edges of the scalp-wound were brought together by horse-hair sutures, an antiseptic dressing applied, and the patient put back to bed. Six days later, the patient, having recovered from the previous operation, was again anesthetized. The wound was found to have united by first intention, but its edges were easily separated by the handle of a knife after the stitches had been cut. The scalp-flap was again thrown down and wrapped in an antiseptic dressing. A small clot that lay upon the dura was removed, and as large a square dural flap as possible was cut and fastened down over the scalp-flap. The cortex thus exposed was bulging, and, especially over the upper part of the ascending parietal convolution, presented a mottled, unnatural appearance. On palpation no area of special resistance indicating the site of a tumor could be discovered, but on exploring the mottled ascending parietal convolution with the finger, the cortex, being here greatly thinned, was broken through, and a tumor of whitish-gray color was seen. As the ruptured cortex receded the tumor appeared to be discontinuous with the brain-substance, and an attempt was made to shell it out with the finger and the handle of a sterilized silver spoon. This was, however, impossible, as the growth was discovered to be continuous with and involving the surrounding cortex and also the substance of the hemisphere about an inch below the surface and toward the front and middle line. The tumor was semigelatinous in consistence and softer than the normal brain-substance, and it was found easier of removal with a silver spoon.

Considerable hemorrhage occurred, for the control of which a series of fine silk threads were passed through the cortex for a depth of about three-quarters of an inch all around the affected area, except for about an inch at the median line. This area was about two-and-a-quarter inches in diameter.

A free incision was then made through the cortex all around and just within the line of ligature, and all the included part, bone and tumor, was taken away by means of the spoon. The tumor extended to the medial surface of the hemisphere, and so a part of the marginal convolution and quadrate lobule was removed, the falx being equally exposed. In this way as much of the tumor as possible was removed, but as the line of junction of healthy and diseased tissue was so indeterminate, it could not with certainty be known if the whole tumor was excised. It, indeed, seemed probable that it was not.

At the close of the operation the brain presented a large cup-shaped cavity, nearly two inches deep, and the size of half an orange. It was thought that the area removed comprised the upper part of the ascending frontal and parietal convolutions, the anterior part of the parietal lobule and the adjacent portions of the marginal convolution. When all bleeding had ceased the dural flap was carefully stitched in position with fine silk. No bone was returned, but the scalp-flap was brought into place by many horsehair stitches. During the progress of the operation the brain-wound was constantly irrigated with 1 : 2000 solution of mercuric chlorid by squeezing a wet cotton wool mop over it.

The patient was kept warm by hot bottles. She was, however, much collapsed after the operation, and the temperature had fallen to 95°. After a brandy enema had been administered the bed was placed in front of a large fire, and fresh hot bottles were applied. Her condition improved, and the danger of death from shock soon passed away. On the day following the operation the pulse was improved, though still of poor force and tension. There were marked aphasia and complete paralysis of the right arm and leg. A day later there occurred a series of spasms, each lasting a few minutes, involving the right angle of the mouth. On the following day a similar attack, lasting three hours, took place, but after this convalescence was uninterrupted.

The dressings were changed twice on the second day after the operation, and again ten days later, when the stitches were removed. The improvement was progressive, and four months after the operation the hair had grown sufficiently to cover the area of operation. The scalp covering the opening in the skull, which had been a little concave, had reached the normal level. The edges of the bony opening were not quite so sharp as they had been. The scar itself was found with difficulty. The mental condition was restored to the normal; speech was perfect; there was no headache, and the movements of the face were normal. There was impairment of mobility in the extremities on the right side, with some rigidity in the upper, and deformity from muscular shortening in the lower. Sensibility in its various forms was normal. Upon histologic examination the growth was found to be a sarcoma with round and spindle-cells.

Successful Celiotomy for Perforated Gastric Ulcer.—ATHERTON (*Medical Record*, No. 1261, p. 2) has reported three cases of perforation in the sequence of gastric ulceration, in one of which death ensued without operation; in a second, death followed the making of a small opening in the epigastrium, with the evacuation of about two quarts of sour, greenish fluid from the peritoneal cavity, and the introduction of a drainage-tube; in the third, a successful issue was brought about by celiotomy and suture of the margins of the perforation.

The last case occurred in a woman, twenty years old, who, following a meal, was seized with intense pain in the left epigastrium and hypochondriac region, together with the vomiting of thin, sour fluid. The left upper abdomen was somewhat hard, tender, and slightly hyperresonant, but not noticeably distended. Hypodermic injection of morphin afforded temporary relief, but operation was deemed advisable. An incision between four and five inches long was made in the middle line of the epigastrium, and on entering the peritoneal cavity a few ounces of turbid serous fluid escaped, and the somewhat distended stomach presented. The viscus was somewhat adherent in the neighborhood of the pylorus. Here the peritoneal covering was red and thickened, and covered with shreds of lymph, which partly surrounded an opening about as large as a quill, near the gastrohepatic omentum and not far from the pylorus. Two sutures of fine silk were introduced, by means of a common sewing-needle, close to the margin of the opening, and tied, thus snugly closing the orifice. Outside of this five or six Lembert sutures of the same material were placed. Several times the thread cut through the soft, thickened peritoneal coat, but finally a sufficient number held the folds of the indurated walls of the stomach close together until all of the sutures were tied. The abdominal wound was closed with silkworm-gut sutures, washing of both the stomach and the peritoneal cavity and drainage being omitted. A dressing of iodoform-gauze was finally applied. During the operation the patient vomited a pint of greenish fluid.

The subsequent treatment consisted in the administration of hypodermic injections of morphin as required, the introduction of nutrient enemata, and teaspoonful-doses of cold water.

At the end of four weeks the patient was able to be about; and several days later was dismissed in good condition.

Hydatid Cyst of the Parotid in a Boy of Seven.—PIÉCHAUD (*Archives Cliniques de Bordeaux*, 1894, No. 11, p. 508) has reported the case of a boy, seven years old, who presented a swelling in the right parotid region as large as a small mandarin. This had first been noticed some eighteen months previously, and had slowly and gradually increased in size. There had been slight complaint of toothache, but there was no ulceration of the gums. As the swelling increased there occurred snoring at night and difficulty in swallowing. The tumor seemed to be a part of the inferior maxilla, and occasioned some displacement of its ascending ramus. On palpation the mass appeared to be a unilocular cyst, elongated vertically and included between the ascending limb of the inferior maxilla and the mastoid process of the temporal bone. On opening the mouth the swelling was found to invade the pharynx, displacing the tongue, the right pillars of the fauces and the tonsils to the left. With the finger in the mouth fluctuation could be detected, and the light of a candle placed near the tumor on the outside was transmitted to the interior of the mouth. By means of a syringe about two-and-one-half drams of fluid were carefully removed from the cyst. The fluid was alkaline, of a specific gravity of 1006, contained no albumin, but 5 per cent. of sodium chlorid, no cellular elements, no cholesterin, and no hooklets. This operation did not sensibly diminish the size of the swelling, although its tension appeared to be reduced. A second puncture, eight days later, evacuated more than two ounces of fluid, in which were found scolices with attached hooklets, and also free hooklets. The swelling was notably reduced, but for several days the fluid reaccumulated; finally, however, the swelling entirely disappeared. Recovery was interrupted by an intercurrent attack of measles, but was ultimately perfect.

Union of Fractured Clavicle by Suture.—ROUTIER (*Revue d'Orthopédie*, 1894, No. 6, p. 445) has reported the case of a woman, twenty years old, who sought relief for a deformity at the outer portion of the right clavicle of progressively increasing degree. It was learned that a week previously she had fallen from a carriage and fractured the clavicle at the junction of the outer third with the inner two-thirds. The outer extremity of the inner fragment appeared as a prominence beneath the skin, and by depressing the soft parts the surface of the fracture was reached. Below and behind this prominence the inner extremity of the outer fragment could be felt. The separation equalled two fingers' breadths. Fairly firm union had taken place and the deformity was quite considerable. It was proposed to attempt to correct the deformity under anesthesia, and should this fail to expose the bone and bring the fractured parts in accurate apposition. Permission having been obtained and simple reduction failing, the second procedure was carried out and the two fragments were sutured with strong silk. The overlying periosteum was carefully replaced and sutured with fine silk. The wound was closed and suitably dressed. In the course of three weeks firm union had taken place without the least deformity.

Inferior Bilateral Hemianopsia.—Adelheim (*Médecine Moderne*, 1894, No. 101, p. 1582) has reported the case of a man thirty-six years old, who presented loss of vision in the lower half of the field of vision of both eyes. His personal history was good, but his mother and sister had been epileptic, and the mother had lost her vision long before death. Shortly before coming under observation the patient had had some form of infectious disease, the precise nature of which could not be learned. In the course of a month he suddenly, on awaking one morning, noticed derangement of vision with the left eye. Objects appeared to be surrounded by a haze, and he was able to see only their upper half. Slight amelioration of this condition followed the application of leeches to the left temple, but six days later similar phenomena appeared upon the right side. On examination it was found that while most of the other functions of the eyes were normal, the lower half of the field of vision of both eyes was completely abolished. The left eye presented, besides, partial peripheral anopsia in the superior half of the visual field, in the temporal quadrant. Illumination of the superior portion of the retina induced a less active contraction of the pupil than illumination of the lower portion. On ophthalmoscopic examination the superior half was found to be distinctly paler than the lower half. No lesion of the nervous or visceral system could be detected. Varied treatment was without effect, and four years later the condition was found to be unchanged. But seventeen similar cases could be discovered in the literature.

A Remarkable Bullet-Wound.—At a recent meeting of the Royal Society of Physicians of Vienna, Zemann (*Wiener medizinische Blätter*, 1895, No. 51, p. 781) presented the spinal column and liver from a boy, fifteen years old, who died of septicemia nine months after attempted suicide by shooting. The bullet had passed through the left lobe of the liver and the body of the eleventh dorsal vertebra, and between the vena cava and the aorta, without injury to either of the latter. The original injury to the liver had entirely healed, but the projectile had gained entrance into the vertebral canal, causing compression of the cord.

THERAPEUTIC NOTES.

A Contribution to Organotherapy.—Shoemaker (*University Medical Magazine*, vol. vii, No. 5, p. 309) has reported the case of a woman, thirty years old, with symptoms of Addison's disease, in which improvement followed injections of a glycerin extract of suprarenal capsules of the beef. Fifteen minims of the extract represented ten grains of the capsule, and from twelve to twenty minims were injected at intervals of from one to three days for a period of two months. The most marked influence of the treatment was upon the weight, which increased from eighty-nine to one-hundred-and-seven pounds. When the injections were suspended, the weight decreased seven pounds during the following four weeks, remaining stationary for a month, and then steadily and progressively increasing.

Wood (*Ibidem*, p. 311), having observed a case of exophthalmic goiter in which the symptoms improved after the spontaneous evacuation of a splenic abscess, was led to administer a glycerin extract of beef spleen in another case of exophthalmic goiter, and with satisfactory results. The extract was injected beneath the skin daily, at first in doses of five minims, subsequently increased to ten minims.

The Active Principle of Rhus Toxicodendron and Rhus Venenata.—At the recent meeting of the American Physiological Society, Pfaff (*Science*, 1895, vol. i, No. 5, p. 119) reported the separation from rhus toxicodendron and rhus venenata of a non-volatile oil, which, when applied to the skin, caused typical dermatitis venenata. The general opinion hitherto has been that this skin-eruption was dependent upon the action of a volatile proximate principle, and toxicodendric acid has been generally accepted as the active poison. For prophylaxis, thorough washing with an alcoholic solution of lead acetate was proposed. The oil is soluble in alcohol, and forms a nearly insoluble lead-compound in alcohol, and is thus best removed from the superficial skin.

The Treatment of Diphtheria with the Antitoxin.—Dreyfus (*Lyon Médical*, 1895, No. 5, p. 146) relates that from October 15, 1894, to January 21, 1895, 78 cases of diphtheria were treated with the antitoxin at the Charité Hospital of Lyons. Among this number there were 15 deaths, a mortality of 19.29 per cent. Five of the deaths were due to conditions of which the diphtheria was a complication, 1 to typhoid fever, 1 to pneumonia, 1 to diarrhea, and 2 to broncho-pneumonia. In previous years the mortality of diphtheria has been 50 per cent.

For Dysentery :—

R.—Acidi borici	ʒiv.
Acidi tannici	gr. xlv.
Tincturæ opii . . .	gtt. xv.
Aqua	fʒx.—M.

S.—Use as an enema.

Lieberson, *Rev. Int. de Méd. et de Chir. Prat.*, 1895, No. 2.

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SATURDAY, FEBRUARY 23, 1895.

THE MEDICAL SHARP.

IN commercial life there is a certain rough standard of honesty in buying and selling, beyond which if a man go he is recognized as an unprincipled or a crooked dealer. There are all grades of crookedness, from that of a slight overcharging the trustful and ignorant up to the green-goods business, burglary, railroad-wrecking, and political bossism. In the law, tremendous fees are not seldom charged, but in such cases there has usually been a distinct service performed (by fair or by foul means, it matters not here) of greater value to the client than the price of the lawyer's bill. In the ministry the religious quack hardly gets rich from his "magnetic qualities," and the contributors must be willing to continue the contributions; it is proper enough that they should pay for the pleasure of their deception.

But in medicine, in modern commercial medicine, we mean, there is a rapidly growing condition of things that is like that in no other profession. There is an increasing number of medical men, so-called, who have struck the idea that, irrespective of the value of the service, the more they charge the more they may charge, and the more practice they will get thereby. Other members of the profession are disposed to keep still in the face of these sharpers; but it is high time that the profession arouses itself to the fact that this is a professional matter, and that there is stealing through the community a deep-seated disgust that does not stop with detestation of the individual sharper, but that looks upon medical men as all "tarred with the same stick." The feeling is settling into a sullen grudge and hatred that bodes no good for medicine, because the laboratories, the endowments, etc., which we desire must finally spring from the general feeling of respect in which we are held by the community as a whole.

Take such too common tricks as these: Enticing a patient from the hospital on the ground that in the private office better treatment will be possible, and ending in an exorbitant bill; the outrageous fee to those who will pay it because of fear of scandal, the patient having had specific disease, having had an abortion, etc., etc.; one called in consultation, charging several hundred dollars, and thus exhausting the patient's small stock of money and good will, so that the general physician who advised the consultation can get nothing for his own service; unnecessary or repeated operations with fees geometrically increasing out of all reason; the abuse of the patient's confidence and trust in a special physician, when the thousand-dollar charger knows that many another is quite as capable of good medical or surgical work as himself, and would be glad to do it for one-tenth the money; the flattering of the vulgar superstition that the surgeon is a greater man than the diagnostician and therapeutist, and that the fees for operating should be ten times those for equally arduous and skilled non-surgical work; humoring the hysteric in the insane desire for treatment or for operations; and lastly, the impudent bill of many hundreds or even thousands of dollars simply because it can be collected in whole or in part, and also in order to spread abroad among a few foolish rich the fame of being a "big charger," etc., etc.

There are perhaps a very few asinine *nouveaux riches* who are attracted by such roguishness and who prefer to pay exorbitant fees. If the rogue's practice were limited to such people, there would be less to criticise. But he who plays this flashy game with rich nincompoops will also try it upon the poor and upon those who are not flattered by it, and there then steals through the community a loathing that, as we have said, is not limited to the sinner, but that holds the whole profession accountable. There follows a close bargaining by prospective patients with the most self-respecting physician, in which future fees are stipulated, conditioned, and forced down, and the medical aspect is lost sight of in suspicion and bargaining. After the sharper has "bled" the patient or his friends, the reputable physician must dicker, and is finally made to suffer for the impudent extortion of another. Medical men hardly suspect how widely these stories of the few extortions travel and how long their echoes continue to resound in the community. They neutralize (as few of them as we are glad there are) the thousands of acts of kind charity and self-sacrifice, and leave malevolence and distrust where there should be gratitude and good will.

As a general rule, the fellow who has caught up the trick of huge fees as an advertising and money-making dodge is, of course, a less skilled and less competent physician than another who adheres to principle and honor in his charges. Ten to one he is an arrant quack in all but name. It is only exceptionally that medical ability is coupled with such methods of obtaining money under false pretences. There are always representatives of this class in every city; we all know them well, and we know that their medical and surgical ability is in inverse ratio to their impudence. Alas, that the lay world is not so discerning as we are. And for this reason, as well as for others, the profession owes it to itself to disallow the sharper's attempt to foist himself upon the community as the representative of professional action and custom. We shirk our duty—ay, even our self-interest in the long run, if we "go into our shell" and say, "It is no business of ours," that "people will find him out by and by," and all the other lame reasons for *laissez-faire*. It is of course a puzzling thing to understand whence these sharpers continue to draw their victims; but a large part of the mystery consists in our failure to visit these upstarts with professional condemnation. We assent that they shall wriggle and scheme themselves into professorships, and censorships, and high official medical positions, whereby we publish our own cowardly acquiescence in their supposed professional standing and representative function, and encourage our patients in the delusion which we indeed see through, but which in the end damages our own standing and the good name of medicine itself.

We are heartily in favor of the elevation of medical fees, but we favor an elevation of those of the diagnostician, the obstetrician, the therapeutist, and the refractionist, as well as those of the surgeon, the operative gynecologist, the "cutter," and the cataract-extractor. We favor a general advance in accordance with honor and the general standard of values, and not the brutal and exceptional extortion of the surgical sharp.

REGULATION OF THE PRACTICE OF MEDICINE IN THE DISTRICT OF COLUMBIA.

THERE has been introduced into the Senate of the United States a bill "to regulate the practice of medicine and surgery, to license physicians and surgeons, and to punish persons violating the provisions thereof in the District of Columbia," which has been read twice and referred to the Committee on the District. The bill also provides for the regulation of the practice of midwifery by women not physicians. The bill provides for the creation of a board of medical supervisors composed of the presidents of three boards of medical examiners (regular, homeopathic, and eclectic), of five members each, and two members to be appointed by the Commissioners of the District, and in most respects conforms to similar laws already in force. The position of THE NEWS on the question of legislation for the regulation of medical practice is so well known as not to demand repetition. The bill before us, however, contains certain objectionable features, the failure to remove which must in a large measure defeat the very objects of its enactment. Thus it is stipulated that

> "Any applicant intending to practise in the District of Columbia any system of medicine or treatment other than the regular or homeopathic or eclectic system, and stating such intention in his application, shall be exempt from such part of any examinations to which he may be subjected as relates exclusively to the treatment of disease, but such applicant shall submit in all other branches to the same examinations as are required of other applicants, and shall be examined by such board of examiners as may be designated by the board of medical supervisors; *Provided*, That any person who may avail himself of the exemption allowed by this clause, and who receives a license under this act, shall cause at all times to be plainly affixed to any sign or signs he may erect or cause to be erected, and to any prescription-blanks, bill-heads, and other like articles he may use in his professional work, and to be inserted in any advertisement he may cause to be displayed, the designation of the system of medicine or treatment employed by him for the cure or relief of disease."

This is objectionable as tending to invite and encourage quackery of all sorts and stamping it with the seal of legitimacy. It further recognizes and sanctions methods of seeking notoriety that are contrary to the spirit of the best professional ethics. On the contrary, it were desirable to have some provision made looking to the prohibition of public advertisement of ability to treat and cure certain diseases, such as forms a part of most legislation for regulating the practice of medicine. Finally, it would be well for the bill to be so amended that of the two members of the board of medical supervisors appointed by the Commissioners of the District both shall not be adherents of any of the three so-called systems of medicine named in the bill, in order that none should acquire a majority in the board.

Rational regulation of the practice of medicine has in view the protection of the public, and can only inure to the benefit of the community. All good men will unite in the effort to suppress quackery and charlatanry. As the central seat of government, and in a sense the representative city of the United States, Washington and the District of Columbia should have been the first to enact legislation regulating the practice of medicine within its bounds, and protecting the health and lives of its citizens; but "better late than never"—in doing good.

EDITORIAL COMMENTS.

"Uranalysis."—We have been taken to task by the learned author of *Purdy's Practical Uranalysis* and by the *New York Medical Journal*, for criticising (in our review, p. 26, January 5, 1895) the term *uranalysis*. Both critics courteously blame us, and aver that *uranalysis* is the proper formation of the word, and that *urinalysis* is, so to speak, a barbarism. But we are sorry to find no reasons, or no valid ones, adduced for this opinion; and we are still more sorry, at least tentatively, and always humbly, to differ from such competent authorities. In our opinion, all the objections that can be adduced against *urinalysis* are doubled in number and trebled in force against *uranalysis*.

1. In the first place, *urinalysis* has had and still has the field. However objectionable etymologically a term may be, possession, in philology, is even more than nine points of the law. Any attempt to supplant a word in use is almost always in vain, and is like resisting the tide. One can never reach the sources of the perversion, because they are behind us and beyond us. But if one hazard the impossible task, he must have patently sound and evident reasons.

2. We suppose the chief objection to *urinalysis* to be against the elision of the syllable *an* of the second part of the compound, *analysis* (Greek, *ἀνάλυσις*). But in *uranalysis* there is an elision just as culpable, or more so, of one syllable of the other root, *urin-* (Latin, *urina*). Why is the elision blameworthy in the one case and praiseworthy in the other?

3. The whole question of both formations revolves about an absurdity. The dictionaries derive the compounds of *ur-* and of *urin-* from the Greek *οὖρον*—an evident blunder, as they are patently derived from the Latin, and these hybrids, such as *uremia*, etc., are simply hybrids, none the worse for the fact, except for the silly attempt to conceal their parentage by false etymologies, this now-you-see-it and now-you-don't derivation. The stickling for pure and logical formation as applied to our medical barbarisms is nowhere more laughably illustrated than in the whole series of words pertaining to the urine.

Wherefore the prejudice against the hybrid? To us it seems the argument of the purist and the puerile. As our modern coinages did not grow out of the Greek or Latin, but are simply new creations using the old roots as excuses, why should not the two parts of a compound medical word be derived from two languages? What earthly objection is there to it? Was language made for man, or man for the sake of language? Whoever shall attempt to banish hybrid words from medical language will have undertaken a task at once impossible and absurd. We confess, indeed, to a great respect for mules; they are not so showy as horses perhaps, but they are quite as beautiful as asses, and far more useful and economic, all things considered, than either horses or asses.

4. A weighty objection to *uranalysis*, as a newly introduced word, consists in the fact that it is identical with, and, therefore, liable to be mistaken as a designation of facts like those now expressed by any of the other *urans*. *Uran-* is now already used to signify about a dozen things, one of the nine muses, one of the minor planets, a genus of plants, a mineral, one of the elements, one of the major planets, a mythologic deity, a dye-stuff, the palate, a form of megalomania, etc., etc. It would seem inadvisable to load these two syllables with further diversity of significance, whilst the root *urin-* has but a single meaning.[1] Philologically we do not assent to the doctrine: For whosoever hath, to him shall be given, and he shall have more abundance; but whosoever hath not from him shall be taken away even that he hath.

If one's philologic conscience is so hypersensitive as to object to *urinalysis*, it would seem that it must surely balk at *uranalysis*. In this event we would advise a trial of *ouronanalysis*, which is *not* a hybrid, and which is perfectly correctly formed. *Urinanalysis* is also correct, and is one letter shorter than *urine-analysis*. But why cherish fondly either or any of the objectionables? *Urine analysis* or *analysis of the urine* seems pretty good English.

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[1] This objection has also struck others. Since the foregoing was written the *Liverpool Medico-Chirurgical Journal*, January, 1895, p. 206, has said:

"Life is not so very short, or the use of the words 'urinary analysis' so very frequent, that it would severely tax any writer's time to employ the clearer double word than the obscure and doubtful single one which forms part of the title of the book under consideration. The meaning of 'urine analysis' is plain and unmistakable; not that of 'uranalysis,' seeing that it may apply to many things, such, for example, as 'urea analysis,' 'uranium analysis,' 'uranite analysis,' 'uryle analysis,' etc."

The Dynamics of Life is the title of a most interesting lecture—interesting to those whose thought runs naturally to the deeper problems of physiology and neurology—by that great neurologist, Dr. W. R. Gowers. The address was delivered October 3, 1894, before the Medical Society of Manchester, England, and was published in the *Lancet*, and has, we believe, been republished as a pamphlet in our country. There is in it a remarkable lucidity of thought upon a somewhat recondite subject, and a delightful simplicity of language, almost convincing the reader that in reading he knows considerably more about the matter than in sober reality is demonstrably known. The spirit of a brave and scientific use of the imagination is altogether praiseworthy. Dr. Gowers finally admits that the title he uses is a misnomer, that he does not attempt to deal with the dynamics of life, properly speaking, but only with some of the fundamental processes of physiologic and nervous function. By the aid of careful inference and a sort of philosophic diagnosis by exclusion we are led step by step onward into the mysteries of physiologic physics, until we reach the inscrutable mystery lying behind all biologic function—the mystery of vitality, or of Life. On one page we are somewhat lonesomely left in a kind of agnostic heaven concerning "vital energy," but upon the next page we are reassured that "there is more in Life than the processes it controls." The inference remains—and we are surprised that our lecturer does not draw it—that the fact of the "control" by Life of these "processes" is absolutely indisputable. But the directional control of physical forces demands, by inescapable logic, an added increment of "energy" in the realm of measurable, or physical, phenomena. No one is more ready to follow the leading and logic of facts than Dr. Gowers: why then balk at the conclusion that the perception and weighing of this added energy of control only await the finer perceiver and the more delicate scales to make it just as apparent to science as that of an experiment with the bolometer or the torsion-balance. Lord Kelvin has said that we know more of the ether than we do of shoemakers' wax. There are some minds that fondly think themselves "scientific" that have so little confidence in logic or the laws of mind that they doubt if two apples and two apples make four apples, unless the apples be there before them with which to prove the suspicious proposition, and even with the necessary articles before them they would hardly admit that two apples and two spoons make four things. The mind of Dr. Gowers is by no means of this order, and he knows that inference and logic and imagination always precede scientific demonstration. Such a logical faith as we have indicated seems fully as necessary and imperative as many statements agreed to in the essay. With this one added step frankly taken the mournfulness of the splendid comparison of the mystery of disease and the problem of Life to the sphinx "that looks but cannot see," is transformed into the assurance of spiritualized insight that sees without the need to look.

The Saving of Life from Drowning and the Resuscitation of the Apparently Dead.—Old lines of usefulness are constantly widening and new ones forever opening. While, perhaps, the dangers to life have increased, the means of protection and prevention have kept pace. Some lives are lost through ignorance, some through carelessness. That many lives are lost that could be saved by the observance of simple precautions or the application of simple measures in trained and intelligent hands requires no elaborate discussion. The Life-Saving Society is the name of a London institution, organized in 1891, for the purposes of promoting technical education in life-saving and in resuscitation of the apparently drowned; of stimulating public opinion in favor of the general adoption of swimming and life-saving as a branch of instruction in schools, colleges, etc.; of encouraging floating, diving, plunging, and such other swimming-arts as would be of assistance to a person endeavoring to save life; and of arranging and promoting public lectures, demonstrations, and competitions, and to form classes of instruction, so as to bring about a widespread and thorough knowledge of the principles that underlie the art of natation. The society has been highly successful in its efforts, and has issued a *Hand-book of Instructions for the Rescue of the Drowning*, which has reached its third edition and its seventeenth thousand. This well-printed and illustrated booklet of 107 pages contains much useful information which, if properly availed of, must result in great saving of life, as well as affording a delightful and healthful means of exercise. The course of instruction is both theoretic and practical, and is carried out on land and in the water by means of drills described in the *Hand-book* Certificates of proficiency and bronze medallions are awarded to those that give satisfactory evidence of efficiency to render aid to persons in danger of drowning, nearly four hundred having been awarded during the past season. The work is done without remuneration, and is supported by voluntary contributions. H. R. H. the Duke of York, K. G., is the honorary president of the society; W. H. Greenfell, Esq., the acting president; Mr. Edmund V. Salaman, the honorary treasurer; and Messrs. Arch. Sinclair and Wm. Henry, the honorary secretaries; and the officers of the society are at 3 Clarendon Square, London. We do not know that branches of this worthy organization or that any similar organization exists in the United States, but the formation of the one or the other would be a most praiseworthy undertaking that could only be productive of a vast amount of good.

Personal Hygiene.—There are certain subjects that may be designated "border-line" that fail to receive the consideration that they deserve from either the popular or the educational or the scientific writer. For the one they are somewhat too prosaic, for the others perhaps too trivial. A book or a series of books on the subject of personal hygiene would, we are sure, fulfil a most useful purpose. Sundry scattering efforts have been made in this direction (notably Dr. Burt G. Wilder's capital little booklet, *Health Notes for Students*, published by Putnam's Sons), but scarcely any worthy the importance of the matter. It is true we have works on the care of the mouth and of the teeth, of the throat and of the voice, and of various other individual parts of the economy, but so far as we know there does not exist a systematic dissertation upon the hygienic care of the whole body, including the management of the skin, the hair, the nails, the eyes, ears, nose, the genito-urinary organs, and the anus. There is both an art and a science in personal hygiene, but they have not received the development that their importance entitles them to. We are moved to these remarks by a timely article in the *Journal of the American Medical Association*, January 12, 1895, p. 46, by Dr. J. Rawson Pennington, on the "Hygiene of the Anus and Contiguous Parts." The subject is rather a homely one, but receives considerate treatment. There can be no doubt that many of the rectal and anal troubles which are so prevalent can be ascribed to neglect in the care of these parts. Constipation, straining at stool, the injudicious use of purgatives, the position necessitated by the modern water-closet, the failure of simple ablution, the use of unsuitable toilet-papers or worse are among some of the influences that may be held responsible for such conditions as hemorrhoids, fissures, ulcers, prolapse, inflammatory processes, reflex phenomena, and mechanical distubances of adjacent viscera. In this era of preventive medicine the dissemination of a proper knowledge of the physiology of the outer textures and accessible organs of the body is essential, and will go far to limit a numerous class of avoidable ailments.

Strange Logic is that of our usually consistent and always excellent contemporary, the *Boston Medical and Surgical Journal*, when it would charge President Eliot with the responsibility of broken bones in the future from foot-ball playing. President Eliot frankly condemns the game in words we quoted in our issue of February 9th. In trying thus to stop the vicious excesses of the game he is to be made responsible for injuries resulting from those excesses! Partisan logic could surely go no further. To-day Captain Bahen, of Washington, lies slowly dying, paralyzed from the chest down, from fracture of the spine, occurring months ago on the foot-ball field. We suppose that this "trivial accident" and the hundred or more of deaths that have occurred on the foot-ball field are to be charged to the "extremists" who have opposed this atavistic reversion to barbaric "sports." Such logic and such reckless indifference to human suffering are doing excellent service in awakening parents and educators to the pernicious influence of the "game."

SOCIETY PROCEEDINGS.

NEW YORK NEUROLGGICAL SOCIETY.

Stated Meeting, February 5, 1895.

Dr. C. A. Herter, Vice-President, in the Chair.

"Charcot Monument Fund." Dr. Herter, Chairman of the Charcot Monument Fund Committee, reported that $533 have been received. This amount was mostly made up of large subscriptions, and there has been a lack of general interest in the matter. The committee hoped to increase the amount to $800, or $1000, so as to make a really worthy contribution to the general fund, and in order to accomplish this it was very desirable that each member of the society should contribute something, no matter how small the amount.

"Athetosis with Beginning Tabes." Dr. Joseph Collins presented a male patient, thirty-seven years old, married, and by occupation a policeman. The family history was very good. Syphilis and alcoholism were denied, and there were no traces of either to be found. The man had never used tobacco nor indulged in excesses. The only factor in his previous history that was at all pertinent was that nearly eight years before coming under observation, while attempting to make an arrest, he was thrown against a pillar of an elevated railway, and received a severe cut over the right parietal region. He was not unconscious, but was incapacitated for about three weeks. There had at no time been any headache.

For a year there had been noticed some involuntary movements of the right hand, particularly on excitement and exertion. Accompanying this was a sense of numbness in the hand and upper right extremity, and a loss of dexterity in the fingers of this hand. There was also drooping of the left eyelid, at first intermittent, but subsequently constant. Further, transient attacks of diplopia occurred. The numbness of the right hand and arm gradually grew worse, and the member felt heavy and useless. For a short time a similar feeling of numbness had been perceived in the legs, particularly in the left, together with the sensation of a firm band fastened around the calf of the right leg. Sexual vigor had begun to diminish within six or seven months, until gradually a state of impotency was reached. There was no trouble with the sphincters, and there had been no disturbance of speech and no uncertainty of gait, either by day or by night.

Examination showed more or less irregular movements of the right upper extremity, particularly manifest in the hand. These movements constituted neither a clonus nor a tremor, nor were they sufficiently rhythmic, determinate, systematic, or uniform to be called athetoid, and there was no tendency to distortion. They continued during sleep, but to a less degree, and were aggravated by stimulation and excitement. They consisted in a sort of flexion and extension of the hand on the wrist and irregular movements of the fingers. They could not be diminished by the strongest endeavor on the part of the patient. The strength of the right arm was a little impaired, more in the extensors than in the flexors. There was considerable tactile anesthesia, but the pain-sense and thermal sense were normal. The muscular sense was impaired, and there was loss of the sense of position in the right arm. When a coin, such as a silver quarter-dollar or half-dollar, was dropped into the palm, the man could feel it strike, but he had no idea what it was, nor could he tell when it was removed. There was marked ataxia in this extremity, complete loss of dexterity in the fingers, and great over-action on attempts at directed effort. The left palpebral fissure was narrowed, but there was no real ptosis; the left eye seemed small and retracted, while the pupil was pin-head in size and did not react to light and very slightly in accommodation; there was no muscular deficiency. The pupil of the right eye was small; it reacted in accommodation, but not to light. There was no limitation in movement or of the visual field in either eye.

Both optic nerves were pale, the left rather more so than the right. It was thought they were possibly in the first stage of atrophy. Vision, R. 20/L; L. 20/XL; color-perception was good; there was no scotoma.

The knee-jerks were completely absent, even with reinforcement. Station was steady. There was no twitching of the left hand, but the fingers had lost their dexterity to some extent. There was slight numbness in the left upper extremity, but objectively sensibility was normal. There was no muscular atrophy. Although the patient strenuously denied syphilitic infection, and there was no evidence of the disease, he was put upon mercurial inunctions and increasing doses of potassium iodid. This treatment, combined with warm baths, rest in bed, massage and tonics, was kept up for ten weeks, and at the end of that time the patient had not shown the slightest sign of improvement, excepting the return of sexual potency. The treatment was then changed to gold and arsenic chlorid.

Dr. Collins regarded the case as one of athetosis, with beginning tabes. This combination is rather rare, only a few cases having been reported. The only symptoms of tabes in this case were the loss of knee-jerks and the condition of the man's eyes. He had never had any pains.

Dr. M. Allen Starr said the case impressed him as one of multiple lesions, and in the absence of pains, together with the marked unilateral character of the symptoms, it differed very decidedly from locomotor ataxia. A person may have ataxia without necessarily having locomotor ataxia, and it may be the result, as may also the loss of knee-jerks, of a lesion in the pons, or crus, or cerebellum.

Dr. B. Sachs said that on account of the multiplicity of the man's symptoms he did not regard the case as one of locomotor ataxia, pure and simple. He rather suspected that the case was one of cerebro-spinal syphilis. He expressed the opinion that one of the most certain symptoms in cases of syphilitic tabes—as distinguished from pure tabes—is an inequality in the pupils; either they are unlike, or they do not act alike.

Dr. Starr said that he felt inclined to agree with a statement made by Dr. Buzzard, of London, in a recent book, that multiple sclerosis is a much more frequent disease than has heretofore been supposed. That writer reports five cases of multiple sclerosis in which the ordinary diagnosis would be locomotor ataxia.

Dr. Collins said that he regarded the case as one of cerebro-spinal syphilis of the tabic type. The patient was seen a number of times by Dr. C. L. Dana, who made the same diagnosis. Dr. Collins added that he did not think it possible to have a lesion of the crus or cerebellum without the development of certain motor and other symptoms which this man did not present. This man probably had syphilis many years ago, and there was now some thickening in the capsule that gives rise to the athetosis.

Dr. Herter said that he thought the case was one of multiple sclerosis rather than cerebro-spinal syphilis. He did not consider it one of locomotor ataxia. It is perfectly possible to have a lesion of the crus that gives rise to anesthesia and incoördination on one side. In many cases of multiple sclerosis one of the early symptoms is slight optic atrophy.

"A Contribution to the Subject of Tumors of the Spinal Cord, with Remarks upon their Diagnosis and their Surgical Treatment, with a Report of Six Cases, in Three of which the Tumor was Removed." Dr. M. Allen Starr stated that the diagnosis of tumors of the spinal cord has only become possible with any degree of accuracy within the past few years, since the localization of the motor and sensory functions of the cord has been precisely determined. The practical importance of a subject of this character cannot be exaggerated, inasmuch as a study of the cases upon record shows that relief of the symptoms and cure of the disease are perfectly possible by surgical interference in the majority of cases when the diagnosis is made in time.

From a careful review of the literature of the past ten years he had been able to collect 123 cases of tumor of the spinal cord. In 100 of these the history was fairly satisfactory, and in the light of our present knowledge a diagnosis should have been quite clear some time before death. In 54 of the cases it should have been possible to reach not only a diagnosis, but also a conclusion as to the feasibility of an operation. Studying the cases from a pathologic standpoint, it was found that of the 100 cases there were 75 in which the tumor could have been removed. As a matter of fact, operations had been undertaken for the relief of tumor of the spinal cord in 22 cases (not included in the 123 cases previously referred to). In only two instances had the surgeon failed to find the tumor sought for; in but one was it impossible to remove it when found. In 11 cases the patients died soon after the operation; in 11 cases they recovered from the operation. In 6 cases the operation was followed by recovery from the condition of paraplegia. After fully reporting 6 cases of tumor, in 3 of which the diagnosis was made and the tumor successfully removed, Dr. Starr said that the most important and earliest symptom of tumor of the spinal cord is pain. The location of this pain is usually in the peripheral distribution of the nerve-root that is first compressed by the growth of the tumor. In the majority of cases the pain is referred to the epigastrium or to the abdominal region, or to the legs or arms, rather than to the spine itself. The pain is of a severe neuralgic character, is sometimes described as burning, and as it increases, it appears to shoot along the course of the nerve that is implicated. The second group of symptoms of diagnostic importance are those caused by the compression of the cord by the tumor. It is well known that when compression is exerted either upon a nerve-trunk or upon the spinal cord, a certain order is commonly observed in the symptoms produced, viz.: (1) pain referred to the periphery; (2) increase of reflex activity; (3) paralysis; (4) loss of sensibility; (5) loss of reflex activity. In the vast majority of cases tumors of the cord have been found in the dorsal region.

A summary of the cases collected from the literature of the past ten years showed that thus far the number of recoveries after the removal of spinal tumors has been but six, and in one of these the compression was exerted upon the cauda equina and not upon the cord proper. It must be said in explanation of these unfavorable results that the operation was not undertaken until the tumor had been present for a number of months, and until the secondary destruction of the spinal tissue was of such a nature that regeneration of the nerve-elements was practically out of the question.

In spite, however, of the gravity of the situation, and of the very unfavorable results that have thus far attended the removal of spinal tumors, it is always to be remembered that the disease is otherwise of a hopeless character and of a necessarily fatal termination, and, hence, any measures for its relief are justifiable. It is also to be remembered that the earlier the diagnosis can be undertaken, the more likely it is to be followed by relief.

Attention was called to the relation of the segments of the spinal cord to the vertebræ, and it was pointed out that tumors lie from two to four inches above the line of anesthesia on the body. Large incisions, the removal of the bone by cutting forceps and rongeur, the cautious division of the dura and care in handling the cord to prevent hemorrhage and pressure were recommended.

Dr. C. L. Dana said that cases of spinal tumor have been rare in his experience. He recently saw a case in which he felt inclined to make that diagnosis, although he could not say positively whether the lesion was a tumor or not. The patient was a female, aged thirty years, who was operated on about a year ago for carcinoma of the foot, the leg being removed above the knee. The patient made a good recovery and remained well until about nine months after the operation, when she began to suffer from neuralgia on the right side, in the region supplied by the seventh and eighth dorsal nerves. She gradually grew weaker, and there was a certain amount of cachexia. Four months after the onset of the pain paraplegia developed which, within a week, became complete for both motion and sensation. There was a loss of control over the sphincters, and the woman presented all the symptoms one would expect from a transverse lesion of the cord. The sudden onset of the paraplegia made it probable that in this case there was a malignant growth of the cord, with, perhaps, acute softening due to hemorrhage or embolism. Dr. Dana added that thus far the result of the surgical treatment of tumors of the cord is rather discouraging; perhaps it will be better in the future, when the tumors are recognized earlier.

Dr. Sachs said that this subject evidently possesses a greater interest now than it did a number of years ago when Erb made the statement that spinal tumors were of so little importance that he did not care to enter into their differential diagnosis. It is doubtful, however, whether the practical importance of the subject will, in years to come, prove to be much greater than it has been in the past. In most of the cases reported as operated on with good results the tumor was extra-dural. In the diagnosis of these cases it is a point of the greatest importance to try to make out whether the growth is extra-dural or intra-dural. Further, it is important to differentiate between the extra-spinal and intra-spinal. When the cord itself is involved, it is very doubtful whether anything can be gained by an operation.

Dr. Sachs said that while he was perfectly willing to acknowledge the value of pain as a means of diagnosis in these cases, he thought Dr. Starr had laid rather too much stress upon this. The pain is produced by tumors that rest chiefly on the posterior surface of the cord, and while undoubtedly a large number do take their origin in that region, perhaps the majority, still there are some, particularly those in connection with caries, that would be likely to give rise to symptoms referable to the anterior nerve-roots rather than to pain. These so-called root-symptoms are often very important. Before advising an operation in these cases, it is well to try to arrive at a conclusion as to the character of the growth. In cases in which there is any suspicion of tuberculosis, it is doubtful whether one should operate; also in specific cases. The operation is of so serious a nature that everything must be carefully considered before it is resorted to. Dr. Sachs called attention to the fact that some cases in which the symptoms might very well lead one to suspect tumor might prove to be cases of localized specific meningitis. Such instances have come under his observation. Thus far, the results following spinal operations have been extremely discouraging, and the prospects are even more gloomy than with brain-tumors, or fully as much so. After the removal of spinal tumors, the patients, for some reason which has not been determined, do not seem to improve. This is probably due to structural changes in the cord, so slight in extent that they are not noticeable to the naked eye.

Dr. A. J. McCosh discussed the subject from a surgical standpoint. He stated that at the present time the outlook in this field of surgery is rather gloomy. One obstacle to the attainment of brilliant results lies in the character of the growths. The great majority of spinal tumors seem to be either malignant or tuberculous, and in either case very little can be expected from their removal. The operation of laminectomy, *per se*, is not a formidable one; it is rather tedious, and considerable blood is likely to be lost; but if the patient is in fair condition the mortality should not be great. His own results with the operation have not been encouraging. He has operated four times, and in none of these cases did any benefit follow the operation. Still, it must be remembered that these are otherwise hopeful cases, and if an operation offers a reasonable hope for relief it should be undertaken.

Dr. Herman M. Biggs said that in the cases of malignant tumor of the cord that he has seen at autopsy there were invariably similar growths in other parts of the body and secondary tumors in the brain. The only kind of tumor of the cord in which the prognosis is at all favorable is the non-malignant connective-tissue neoplasm, such as has been removed by Dr. McEwen. In cases in which the growth is tuberculous or malignant the course of the disease is probably much more rapid than when it is non-malignant, and this fact might give some clue as to the character of the tumor and the advisability of operative interference.

Dr. Herter said that he had seen a number of cases of tumor of the spinal cord, and has recently reviewed the literature of the subject. In doing this he was impressed with the idea that the time had not yet arrived for writing the history of spinal tumors. A sufficient number of these cases have not yet been accurately reported. Dr. Starr has done great service in calling attention to the sensory disturbances met with in these cases and by his careful study of them. He fully agreed with Dr. Starr that pain is the most constant and characteristic as well as the earliest symptom of tumor of the cord; it is much more constant than in brain-tumor.

As regards the character of these growths, Dr. Herter said that of the cases thus far reported carcinomata do not form a very large proportion. The sarcomatous and tuberculous are more frequent, and many of them begin in the spinal cord itself. The gray matter of the cord seems to afford a favorable nidus for the growth of tubercle-bacilli. Probably one-half of the tumors of the cord will never be classed as operable.

Dr. Starr, in closing the discussion, said that he had thus far been unable to find any definite points of differential diagnosis between extra-dural and intra-dural tumors of the cord. There are some points of differentiation between the intra-spinal and the extra-spinal, including under the former heading both the intra-dural and extra-dural. With the intra-spinal there is more likely to be an early development of bedsores and cystitis; also reaction of degeneration and atrophy of the muscles. The supposed rarity of these cases is probably largely due to the fact that they are often unrecognized. The same is true of other diseases. Eight years ago syringomyelia was rarely met with; since that time the disease has been studied and well described, and last year sixty-eight cases were reported. Dr. Starr said that within a year his paper on spinal tumors will no doubt be outgrown, but he expressed the hope that it would lead to a more careful study of these cases. The statistics thus far are not so discouraging, and there is every reason to hope that they will be better in the future. Of twenty-two cases thus far operated on, six recovered from the operation and the paraplegia—that is, more than 25 per cent. It is true that in most cases the character of the tumor is such that recurrence is to be feared; still, surgeons do not hesitate to remove a sarcoma in other parts of the body, even though the probability is that it will recur.

NEWS ITEMS.

Diphtheria-Antitoxin in Cleveland.—Dr. A. P. Ohlmacher, professor of pathology and bacteriology in the medical department of the University of Wooster, assisted by Drs. C. B. Parker and H. W. Kitchen, has completed the immunization of a horse against diphtheria. The first injection of 0.5 c.c. of the toxins was made on December 20, 1894, and the last injection of 250 c.c. was made February 5, 1895, thus completing this part of the experiment in the incredibly short space of one month and sixteen days. The toxins manufactured and employed in this work were of high virulence, 0.1 c.c., invariably killing a 500-gram guinea-pig in from thirty to thirty-six hours; and their potency has been repeatedly tested during the work. The first blood-serum was obtained on February 9th, and in the preliminary tests on three guinea-pigs showed strong immunizing power, as all three of the experiment animals were still alive and well three days afterward. It now remains to standardize the antitoxin and it will be ready for therapeutic purposes. The animal treated, it is believed, is the first completely immune horse in this country, and, from all that can be learned, it has been immunized in a much shorter period of time than any before. Roux completed the immunization in two months and twenty days, and cited the fact as remarkable.

The work in the laboratory of the University of Wooster has been done for purely scientific purposes, and the antitoxin will be used only in cases in which preliminary bacteriologic examinations can be made. The antitoxin will not be put in commerce. A detailed report was made before the Cleveland Medical Society on February 22d, together with an exhibition of all possible material bearing on it. The report will be duly published.

To Military and Naval Medical Officers.—Dr. Albert L. Gihon, Medical Director U. S. Navy, U. S. Naval Hospital, Washington, D. C.; Dr. John VanR. Hoff, Major and Surgeon U. S. Army, Governor's Island, Harbor of New York, and Dr. Myles Standish, Captain and Assistant Surgeon, M. V. M., No. 200 Dartmouth Street, Boston, Mass., members of the "Committee on Litter," appointed by the Association of Military Surgeons of the United States, to report at the approaching annual session a desirable form of military litter for the comfortable, safe, and expeditious transportation of the sick and wounded, solicit from medical officers of the National Services and the National Guard of the several States suggestions, plans, or models of such an appliance, to be delivered to either of them at their respective addresses on or before April 1, 1895.

A Journal for Diseases of the Digestive Organs.—The department of "Diseases of the Digestive Organs" is about to be represented by a publication, the *Archiv für Verdauungskrankheiten*, the first number of which will appear in April. It will be published in Berlin and edited by Dr. I. Boas, the well-known author of a work on *Diseases of the Stomach*. He will be assisted by specialists in Germany and other countries. The *Archiv* will contain original articles, besides reviews and abstracts of recent literature, and will embrace diseases of the stomach, intestines, liver, pancreas, and peritoneum, constitutional diseases and dietetics.

The Section on Neurology and Medical Jurisprudence of the American Medical Association has arranged the following symposiums for the May meeting at Baltimore:

Epilepsy: Medically, Surgically, and Therapeutically. Hypnotism and Mental Therapeutics, and its Medico-Legal Relations. Electricity: Some new Therapeutic Relations and Questions of Treatment.

Short practical papers on these topics are urgently solicited. Other papers on subjects belonging to this section will be welcomed. Dr. T. D. Crothers, of Hartford, Conn., is the secretary of the Section.

The Obstetrical Society of Cincinnati at its annual meeting elected the following officers for the ensuing year: President, Dr. A. W. Johnstone; Vice-President, Dr. Sigmar Stark; Secretary, Dr. E. S. McKee; Corresponding Secretary, Dr. W. D. Porter; Treasurer, Dr. Geo. E. Jones.

Prof. Jacob Gottstein, of Breslau, the well-known laryngologist, died January 11th at the age of sixty-three.

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ORIGINAL ARTICLES.

THE BLOOD-ALTERATIONS OF ETHER-ANESTHESIA.[1]

BY JOHN CHALMERS DA COSTA, M.D.,
DEMONSTRATOR OF SURGERY IN THE JEFFERSON MEDICAL COLLEGE, PHILADELPHIA.

UNCONSCIOUSNESS is the dethronement of the reigning forces of the nervous system and the destruction of all central authority, the reduction of cerebral activity to basic and fundamental elements, and the annihilation of the higher psychomotor activities. In other words, unconsciousness is the state of automatic and uncontrolled activity of individual nerve-elements. Artificially induced unconsciousness is known as anesthesia. The anesthetic state may be produced by a sudden diminution of the amount of blood in the brain, as is seen after severe hemorrhages. The knowledge of this fact was utilized in the French hospitals before the days of ether and chloroform, the surgeons producing anemia of the brain by suddenly lifting a man into an erect position from a recumbent posture; the state of anesthesia thus induced permitting the performance of slight operations. Diminution of the blood-supply of the brain by ligation of the carotid artery may produce the same effect. Furthermore, it has long been recognized that partial anesthesia follows forcible and rapid respiration, probably as a result of anemia of the brain.

Anesthesia may be produced by alteration in the composition of blood and the carrying in this fluid of certain extraneous materials to the nerve-centers. This form of anesthesia is exhibited in the carbonic-acid narcosis, in which condition, the internal respiration is diminished and the activity of the cerebral cells is depressed or destroyed. Another example of anesthesia by alteration in the composition of the blood is seen in the inhalation of ether or chloroform.

For almost fifty years ether has been under scientific investigation, and it is generally agreed that it acts on the nervous system as does alcohol, only far more rapidly. When given by inhalation there are four stages of anesthesia:

1. The stage of stimulation, characterized by excitment and a pleasing intoxication.
2. The anodyne stage, characterized by impaired sensation, retained reflexes, delirium, which is most marked in robust individuals, tetanic contraction of the muscles, turgescence of the face, etc.
3. The anesthetic stage, characterized by the abolition of the ordinary reflexes and of all conscious excito-motor sensibility.
4. The paralytic stage, characterized by diminution of unconscious excito-motor sensibilities, and, finally, by death from paralysis of the respiratory center.

The condition of anesthesia is thought by most observers to be due to the passage of ether into the blood and the subsequent direct action of this drug upon the nerve-elements. Prevost has sought to prove this by a well-known experiment. He produced unconsciousness in a frog by the direct application of the drug to the cerebrum after first tying the aorta to prevent the washing away of the agent by the force of the circulation. The defect in his experiment is the fact that the ligation of the aorta alone, by depriving the brain of blood, might be responsible for the unconsciousness.

It seems highly probable, from a series of observations I am about to submit, that the cause of the anesthetic state is not merely the direct action of ether upon the nerve-elements, but involves likewise an alteration in the composition of the blood. It is a well-known fact that slow, chronic, advancing nutritive failure of the brain is first manifest in the decay of the higher and most unstable faculties, which are the last products of evolutionary advance, and that the last faculties to suffer are those that are purely automatic. Consciousness is not lost early in these conditions, because cells producing cerebral activities, of which consciousness manifests the sum, have time in chronic failures to adjust themselves to their altering environment.

We notice this course of events in general paralysis of the insane; the higher faculties of memory, of will, of judgment, of abstraction, and of attention are lost first. Attacks of loss of consciousness due to sudden and limited nutritive failures from congestions or capillary hemorrhages come upon the scene; the emotions are altered, perverted and uncontrolled, and finally, if life be sufficiently prolonged, all faculties but the purely automatic are destroyed and the individual passes into a condition exactly comparable to the coma of alcoholic intoxication or to the anesthetic state induced by ether.

Any condition that suddenly alters the composition of the blood must prevent nutrition, retard the removal of waste products, and fix the molecules of nerve-matter, and may thus produce temporarily a condition analogous to the persistent state of mental deterioration. Diminution in the amount of blood in the brain is known to produce this condition. Altered composition is known to have a like effect, as when the blood holds carbon dioxid in large amounts; and yet in ether-anesthesia, neither diminished quantity of blood in the brain nor the presence of carbon dioxid in the blood serves to explain all of the observed phenomena. It seems evident that altered nutrition and a failure to remove waste products might depend upon the absence of proper oxygenation as well as upon the presence of carbon dioxid. Diminished capacity for oxygenation means diminished amount of oxygen in the blood; and lessened amount of oxygen means a lessened amount of the oxygen-bearing element, that is, of hemoglobin. Diminished amount of hemoglobin suddenly brought about would theoretically cause malnutrition and unconsciousness, and if this condition is found to maintain in the anesthetic state we can account for the prolonged depression induced in some by the inhalation of ether, and for other conditions that have previously lacked comprehensive explanation.

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[1] A contribution from the Kyle-Da Costa Laboratory, Philadelphia.

That the diminution of the amount of oxyhemoglobin does tend to produce unconsciousness is shown by the drowsiness, the heaviness, and the tendency to syncope shown by sufferers from chlorosis, by the almost comatose condition of the victims of Winckel's disease, and by the abolition of sensibility of rabbits and guinea-pigs in which this disease has been artificially produced, and yet in these conditions the alteration of blood-composition is rather gradual than sudden.

The following observation will show that diminution in hemoglobin is constant after the inhalation of ether; that the diminution is rapid and marked, is accompanied by alteration in the shape of the corpuscles, but by no marked diminution in their number. This diminution in the amount of hemoglobin is so pronounced in the anemic as to give conclusive evidence of the reason why reaction in these cases is often so difficult and the effect of the anesthetic so persistent and prolonged.

The exact mode in which the hemoglobin is removed from the corpuscles is questionable. Practically we know that if blood outside of the body is subjected to a low temperature, and subsequently warmed, the coloring-matter of the corpuscles passes into the blood-liquor. Theoretically we may assume that the rapid evaporation of ether in the air-cells of the lungs produces great cold, and that the blood circulating through the rest of the body becomes subsequently warmed, and the hemoglobin is thus removed.

This theory finds apparent confirmation in the rapid lowering of temperature induced by anesthetics, a lowering that begins with the anodyne stage, and that may reach the extent of four or five degrees. In the cases in which I have made studies of temperature the average fall was found to be from one to three degrees, a fall separated from the fall of shock by the fact of the rapid ascent of the temperature on cessation of inhalation of the anesthetic.

The altered shape of the corpuscles may in part be due to the removal of the hemoglobin, and in part to the dissolving out of some of the fat which they contain. What becomes of the hemoglobin removed from the corpuscles is a question, though the occasional occurrence immediately after etherization of severe jaundice would seem to indicate that in some cases at least this pigment goes to the liver, and is there broken up. In confirmation of the foregoing views I submit twenty-nine cases in which blood-examinations have been most carefully made before, during, and after etherization.[1]

The counts were made by means of a Thoma-Zeiss hemocytometer; the hemoglobin was estimated by means of Gowers' and Fleischl's hemoglobinometers; drawings have been made from the undiluted blood, and of necessity are diagrammatic; all forms of the red corpuscles being represented by red; leukocytes, by pale-blue; lymphocytes, by dark-blue; and blood-plates by green.[2] In making the blood-counts the solutions used for dilution were the 3 per cent. salt solution and the Daland's potassium-bichromate solution.

The estimation in these cases was made just before etherization, during etherization, and after recovery from the anesthetic state. Case XIII was subjected to an estimation three days before the operation, two days before the operation, one day before and just before operation, during slight anesthesia, during profound anesthesia, in the beginning of recovery, and the day after the operation. Case XXIII died of shock after the operation of gastroenterostomy, and sufficient recovery did not follow operation to permit of estimation being made. The other cases are free from complication of shock or severe hemorrhage, and afford pure instances of ether-action. Case XIII was one of examination for stricture of the rectum, a rectal bougie was passed, and there was absolutely no hemorrhage. Case XXI was one of attempted reduction of an old inguinal hernia and was uncomplicated by bleeding. Case

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[1] As the reports of the cases are largely repetitive, it seems unnecessary to reproduce the details of each. Those chosen are Nos. I, III, XIII, XIX, XXI, XXII, and XXVII. In the reprints of the article (procurable upon application) the reports of the entire series of cases are given *in extenso*.

[2] These drawings are on file in the laboratory.

XXVII was one of breaking up of an ankylosis of the finger, and was also unaccompanied by hemorrhage. Case III does not show a reduction of hemoglobin. This apparent discrepancy arises from the estimation having been made without artificial light, and report of this case is made only to maintain scientific consistency; it can be unhesitatingly rejected from the case-group. Case XIX was an alcoholic, never completely under the influence of the ether, and examination showed no apparent fall of hemoglobin, although after etherization the hemoglobin was found diminished. This was due to too early observation, the blood being taken during a period of excitement in which there were violent struggling and tumultuous respiratory efforts.

In twenty-seven cases the fall of hemoglobin is marked and unmistakable. Each case is accompanied by a report of the physical condition of the individual and a uninary examination, with a description of the blood as examined by a Leitz $\frac{1}{12}$ oil-immersion, the slide being undiluted blood.

The following cases illustrate the effect of etherization on the blood:

CASE I.—Patient, B. B., aged eighteen years. Physical examination negative. Urine examination negative. Blood-examination before etherization: Hemoglobin 65 per cent. of normal. Red corpuscles per cubic millimeter, total, 5,000,000. Red corpuscles per cubic millimeter, normal, 3,000,000. White corpuscles per cubic millimeter, 16,500. Proportion of white to total red, 1 : 300. Proportion of white to normal red, 1 : 183. Examination of the corpuscles in the undiluted blood showed normal red, crenated red, leukocytes, and lymphocytes.

Blood-examination during etherization: Hemoglobin 60 per cent. of normal. Red corpuscles per cubic millimeter, total, 5,120,000. Red corpuscles per cubic millimeter, normal, 600,000. White corpuscles per cubic millimeter, 10,240. Proportion of white to total red, 1 : 500 Proportion of white to normal red, 1 : 58. Examination of the undiluted blood showed appearance of corpuscles normal red, macrocytes, broken-down red corpuscles, leukocytes, lymphocytes.

Blood-examination after etherization: Hemoglobin 70 per cent. of normal. Red corpuscles per cubic millimeter, total, 4,000,000. Red corpuscles per cubic millimeter, normal, 2,500,000. White corpuscles per cubic millimeter, 16,000. Proportion of white to total red, 1 : 350. Proportion of white to normal red, 1 : 156. When examined undiluted the blood showed normal red, macrocytes, crenated red corpuscles, lymphocytes, leukocytes.

CASE III.—Patient, F. McG., aged eleven years. Physical examination negative. Urine-examination negative, except that microscopic examination showed many uric-acid crystals. Blood-examination before etherization: Hemoglobin 60 per cent. of normal. Red corpuscles per cubic millimeter, total 4,200,000. Red corpuscles per cubic millimeter, normal, 4,200,000. White corpuscles per cubic millimeter, 15,000. Proportion of white to total and normal red, 1 : 280. When examined by the $\frac{1}{12}$ oil immersion the blood presented a normal appearance.

Blood-examination during etherization: Hemoglobin 62 per cent. of normal. Red corpuscles per cubic millimeter, total 5,000,000. Red corpuscles per cubic millimeter, normal, 3,000,000. White corpuscles per cubic millimeter, 15,000, Proportion of white to total red, 1 : 333. Proportion of white to normal red, 1 : 200. On examining the undiluted blood there were found present normal red poikilocytes, blood-plates, leukocytes, and lymphocytes.

Blood-examination after etherization: Hemoglobin 65 per cent. of normal. Red corpuscles per cubic millimeter, total 4,800,000. Red corpuscles per cubic millimeter, normal, 4,600,000. White corpuscles per cubic millimeter, 15,000. Proportion of white to total red, 1 : 320. Proportion of white to normal red, 1 : 306. Microscopic examination of the blood showed a few crenated corpuscles; otherwise the blood presented a normal appearance.

CASE XIII.—Patient, B. B., aged twenty-three years. Diagnosis—stricture of the rectum. Physical examination negative. Urine-examination: specific gravity, 1022; reaction, acid; no albumin; no serum-globulin; no sugar; no bile; urea, 2.1 per cent. Microscopic, amorphous urates; squamous epithelium.

Blood-examination three days before operation: Hemoglobin 80 per cent. of normal. Red corpuscles per cubic millimeter, total 5,300,000. Red corpuscles per cubic millimeter, normal, 5,300,000. White corpuscles per cubic millimeter, 10,000 Proportion of white to total red, 1 : 512. Proportion of white to normal red, 1 : 512. Examination of the undiluted blood showed normal appearance.

Blood-examination two days before operation: Hemoglobin 80 per cent. of normal. Red corpuscles per cubic millimeter, total, 5,120,000. Red corpuscles per cubic millimeter, normal, 5,120,000. White corpuscles per cubic millimeter, 10,000. Proportion of white to total and normal red, 1 : 512. Undiluted blood normal.

Blood-examination one day before operation: Hemoglobin 80 per cent. of normal. Red corpuscles per cubic millimeter, total, 5,350,000. Red corpuscles per cubic millimeter, normal, 5,350,000. White corpuscles per cubic millimeter, 10,000, Proportion of white to total and normal red, 1 : 535. Undiluted blood normal.

Blood-examination just before operation: Hemoglobin 78 per cent. of normal. Red corpuscles per cubic millimeter, total, 5,200,000. Red corpuscles per cubic millimeter, normal, 5,000,000. White corpuscles per cubic millimeter, 10,000. Proportion of white to total red, 1 : 520. Proportion of white to normal red, 1 : 500. Examination of the undiluted blood showed slight crenation of a few of the red corpuscles.

Blood-examination in early stage of etherization: Hemoglobin 72 per cent. of normal. Red corpuscles per cubic millimeter, total, 5,400,000. Red corpuscles per cubic millimeter, normal, 5,200,000. White corpuscles per cubic millimeter, 12,000. Proportion of white to total red, 1 : 480. Proportion of white to normal red, 1 : 420. Undiluted blood showed the crenation slightly more marked.

Blood-examination during profound etherization: Hemoglobin 72 per cent. of normal. Red corpuscles per cubic millimeter, total, 5,100,000. Red corpuscles per cubic millimeter, normal, 4,000,000. White corpuscles per cubic millimeter, 12,000. Proportion of white to total red, 1 : 425. Proportion of white to normal red, 1 : 316. The undiluted blood showed more marked crenation of red corpuscles.

Blood-examination after patient had fully returned to consciousness: Hemoglobin 68 per cent. of normal. Red corpuscles per cubic millimeter, total, 4,800,000. Red corpuscles per cubic millimeter, normal, 4.500,000. White corpuscles per cubic millimeter, 10,000. Proportion of white to total red, 1 : 480. Proportion of white to normal red, 1 : 450. The undiluted blood showed only slight irregularity of the red corpuscles.

Blood-examination one day after operation: Hemoglobin 70 per cent. of normal. Red corpuscles per cubic millimeter, total, 4,850,000. Red corpuscles per cubic millimeter, normal, 4,850,000. White corpuscles per cubic millimeter, 10,000. Proportion of white to total and normal red, 1 : 485. Examination of a slide of the undiluted blood showed it to be normal.

CASE XIX.—Patient, M. A. C., female, aged forty years. Physical examination negative. Urine-examination negative.

Blood-examination before etherization: Hemoglobin 54 per cent of normal. Red corpuscles per cubic millimeter, total, 6,320,000. Red corpuscles per cubic millimeter, normal, 6,000,000. White corpuscles per cubic millimeter, 12,000. Proportion of white to total red, 1 : 525. Proportion of white to normal red, 1 : 500. Microscopic examination showed only slight crenation in a few of the red corpuscles.

Blood-examination during etherization: Hemoglobin 54 per cent. of normal. Red corpuscles per cubic millimeter, total, 5,000,000. Red corpuscles per cubic millimeter, normal, 4,500,000. White corpuscles per cubic millimeter, 15,000. Proportion of white to total red, 1 : 333. Proportion of white to normal red, 1 : 300. The undiluted blood showed normal red, crenated red, and leukocytes.

Blood-examination after etherization: Hemoglobin 52 per cent. of normal. Red corpuscles per cubic millimeter, total, 5,550,000. Red corpuscles per cubic millimeter, normal, 4,300,000. White corpuscles per cubic millimeter, 15,000. Proportion of white to total red, 1 : 370. Proportion of white to normal red, 1 : 285. This showed considerable alteration, there being present normal red, microcytes, irregular red, blood-plates, and leukocytes.

CASE XXI.—Patient, D. H., male, aged fifty-one years. Physical examination negative. Urine-examination negative.

Blood-examination before etherization: Hemoglobin 80 per cent. of normal. Red corpuscles per cubic millimeter, total, 4,860,000. Red corpuscles per cubic millimeter, normal, 3,500,000. White corpuscles per cubic millimeter, 10,000. Proportion of white to total red, 1 : 486. Proportion of white to normal red, 1 : 350. The undiluted blood showed normal red, microcytes, blood-plates, leukocytes, and irregular red.

Blood-examination during etherization: Hemoglobin 70 per cent. of normal. Red corpuscles per cubic millimeter, total, 5,440,000. Red corpuscles per cubic millimeter, normal, 4,000,000. White corpuscles per cubic millimeter, 12,000. Proportion of white to total red, 1 : 452. Proportion of white to normal red, 1 : 333. Slide-examination showed normal red, crenated and irregular red, macrocytes, microcytes, and blood-plates.

Blood-examination after etherization: Hemoglobin 75 per cent. of normal. Red corpuscles per cubic millimeter, total, 5,080,000. Red corpuscles per cubic millimeter, normal, 4,500,000. White corpuscles per cubic millimeter, 10,000. Proportion of white to total red, 1 : 508. Proportion of white to normal red, 1 : 450. Microscopic examination of the blood showed normal red, polynuclear leukocytes, irregular red, and microcytes.

CASE XXII.—Patient, C. H. S., aged sixty years. Physical examination negative. Urine-examination negative.

Blood-examination before etherization: Hemoglobin 72 per cent. of normal. Red corpuscles per cubic millimeter, total, 5,120,000. Red corpuscles per cubic millimeter, normal, 4,800,000. White corpuscles per cubic millimeter, 15,000. Proportion of white to total red, 1 : 340. Proportion of white to normal red, 1 : 320. The undiluted blood showed, normal red, crenated red, granular leukocytes, and blood-plates.

Blood-examination during etherization: Hemoglobin 41 per cent. of normal. Red corpuscles per cubic millimeter, total, 5,400,000. Red corpuscles per cubic millimeter, normal, 2,500,000. White corpuscles per cubic millimeter, 15,000. Proportion of white to total red, 1 : 360. Proportion of white to normal red, 1 : 165. Microscopic examination of the undiluted blood showed normal red, markedly irregular red, microcytes, blood-plates, and leukocytes.

Blood-examination after etherization: Hemoglobin 68 per cent. of normal. Red corpuscles per cubic millimeter, total, 4,800,000. Red corpuscles per cubic millimeter, normal, 4,000,000. White corpuscles per cubic millimeter, 15,000. Proportion of white to total red, 1 : 320. Proportion of white to normal red, 1 : 266. Slides of the undiluted blood showed marked alteration, but less than during etherization.

CASE XXVII.—Patient, J. S., boy, aged fourteen years. Physical examination negative. Urine-examination negative. Blood examination before etherization: Hemoglobin 70 per cent. of normal. Red corpuscles per cubic millimeter, total, 6,168,000. Red corpuscles per cubic millimeter, normal, 5,200,000. White corpuscles per cubic millimeter, 8000. Proportion of white to total red, 1 :770. Proportion of white to normal red, 1 : 605. Slides showed slight crenation of a few of the red corpuscles.

Blood-examination during etherization: Hemoglobin 55 per cent. of normal. Red corpuscles per cubic millimeter, total, 4,456,000. Red corpuscles per cubic millimeter, normal, 2,000,000. White corpuscles per cubic millimeter, 10,000. Proportion of white to total red, 1 : 445. Proportion of white to normal red, 1 : 200. The undiluted blood showed more marked crenation of the red corpuscles.

Blood-examination after etherization: Hemoglobin 60 per cent. of normal. Red corpuscles per cubic millimeter, total, 4,696,000. Red corpuscles per cubic millimeter, normal, 2,300,000. White corpuscles per cubic millimeter, 10,000. Proportion of white to total red, 1 : 469. Proportion of white to normal red, 1 : 230. The undiluted blood showed normal red, microcytes, crenated red corpuscles, leukocytes, and blood-plates.

CONCLUSIONS.—1. Etherization produces a marked diminution in the hemoglobin of the blood.

2. The red corpuscles and the hemoglobin are especially affected in blood previously diseased, in such conditions, for instance, as anemia.

3. Irregular reports are due to faulty observation, to the presence of altered hemoglobin in the blood, to the faulty aberration as to color of a Fleischl instrument or to taking the blood before anesthesia is completed.

4. The white corpuscles show irregular changes which are not characteristic, and exhibit variations not more pronounced than would be found in the same number of samples of normal blood on different examinations.

5. Age does not apparently influence the results.

6. Ether-pneumonia may possibly be due, in some instances at least, to the action of intense cold upon the lungs, produced by the action of ether-vapor.

7. Edema of the lungs may arise from contraction of the pulmonary capillaries, thus producing a loss of *vis a tergo* and damming up of blood in the veins. Furthermore, the same condition may produce sudden paralysis of the heart.

8. The often-quoted observation as to the effect upon the hemoglobin of shock and hemorrhage re-

quires enlarged repetition upon human beings before the statements can be unreservedly accepted that hemorrhage causes a great fall in the amount of hemoglobin, but that shock does not affect it.

9. The chilling of the blood-stream may be responsible for the nephritis that occasionally follows etherization.

10. Prolonged anesthesia profoundly deteriorates the blood and strongly militates against recovery; hence rapidity of operation is most desirable.

MEDICO-CHIRURGICAL NOTES ON THE WORKS OF HIPPOCRATES AND GALEN.[1]

BY R. HARCOURT ANDERSON, M.D.,
OF NEW YORK.

BACON says: "The variable composition of man's body hath made it as an instrument easy to distemper, and therefore the poets did well to conjoin music and medicine in Apollo; because the office of medicine is but to tune this curious harp of man's body and to reduce it to harmony."

From prehistoric times there have been both the medical and surgical sick, and so many have been both the methods of treatment and the cures, and the administrators of both, that, historically speaking, this subject is chaotic and indistinct; but it is always interesting to the modern medical man to speculate on the various steps which the science has taken from the primitive state to the present.

According to Herodotus, the sick among the Babylonians and Egyptians were exposed to the passers-by, who were not only expected to diagnosticate the case, but to prescribe treatment for the same, and the various diagnoses and means of cure were collected by the priests and inscribed in sacred books or upon the pillars of the holy temples (Iamblichus). In those days the priests were the possessors of all the knowledge and learning of the Egyptians, and this was written in the forty-two Hermetic Books, and these latter were only accessible to members of the priesthood. One of the earliest mentions we have of medical literature is that Athotis, son of Menes, the ancient King of Egypt, who is reported by Manetho as the author of several works on anatomy. This was probably one of the first steps toward freedom from empiric shackles.

At this age medicine was divided into three different kinds, the pharmaceutic, dietetic, and chirurgic, and these were subdivided again and again, until we wonder how there was any practical application of healing at all. The belief was held by the early Egyptians that the body could be divided into thirty-six parts, each of which was under the particular government of one of the Decans or Aerial Demons, and according to Origen, whenever any part of the body was diseased a cure was effected by invoking the demon who presided over or governed that particular part. A kind of theologico-anatomy, according to the existing beliefs at that time, can thus be made out. Somewhat after this idea was the astrologic chart of the modern Francis Moore, which is used at the present time by believers in astrologo-theology. This assigns different anatomic regions to the influence of several special planets.

It has been said that a blind attachment to the works of great and bygone men often leads us into error, the human mind becoming trammelled; but if we look at the literature of the ancients in the proper way, that is, adapting the experience of both the old and more modern masters of science to the exigencies of the work of the present time, culling out the erroneous and false views and actions of both, will it not lead us as nearly as practical to perfection in science? It is very surprising in reading the annals of ancient surgery to find how many of the principles of our modern scientific work were laid down—principles that we follow in some cases without any modification to speak of at the present day.

Hippocrates, perhaps better than any other man, understood what the requirements of the profession were in his day, for he says: "Whoever is to acquire a competent knowledge of medicine ought to be the possessor of the following advantages—a natural disposition; instruction; a favorable position for study; early tuition; love of labor; leisure." And again he says, in another law: "Instruction in medicine is like the culture of the productions of the earth." And again: "Medicine, of all the arts, the most noble, but owing to the ignorance of those who practice it, it is at the present far behind all the other arts." The great master would probably have changed his mind had he lived in the present era; and in connection with this law of Hippocrates, I have been rather interested in finding out what a few of the more modern great men have said of the members of the healing art.

Pope says:

> They are in general the most amiable companions and the best friends and the most learned men I know.

The Rev. Dr. Parr has said:

> I have long been in the habit of reading on the medical subjects, and the great advantage I have derived from this circumstance is that I have found opportunities for conversation and friendship with a class of men whom, after a long and attentive survey of literary characters, I hold to be the most enlightened professional persons in the whole circle of human arts and sciences.

Dr. Johnson has written:

> I believe every man has found in physicians great liberality and dignity of sentiment, very prompt effusion

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[1] Read before the New York County Medical Association, November 19, 1894.

of beneficence, and willingness to exert a lucrative art where there is no hope of lucre.

The following remark of Dr. Knox should also cause great satisfaction to the members of the profession, viz.:

> In no order are there to be found individuals better informed, more polite, humane and ingenuous than among the physicians.

REMARKS ON MYTHOLOGY.

The healing art is generally admitted to have taken its rise among the early Egyptians, although it never reached any great degree of perfection until the attention of the more cultivated Greeks was directed to it. The Egyptian Horus, son of Osiris and Isis, is the Apollo of the Greeks and also the God of Physic, and from this god Æsculapius springs. I may make the remark here that the Grecian and the Egyptian Æsculapius are not the same, and therefore not to be confounded with each other, the history of the Egyptian Æsculapius being about as cloudy as a Scotch mountain-top on a sullen day. The Greek antedates the Egyptian by about three-thousand years.

For convenience of description, medical history has been divided into epochs corresponding to four periods of the world's history. The first period corresponds to the first three-thousand years after the deluge, and during the latter part of this period we find the great names of Hippocrates, Plato, and Aristotle. After this period the most prominent physicians were the Arabians, but as far as the intrinsic value of their work is concerned it is but right to state that they were mere copyists of their predecessors, Hippocrates and Galen. They are, however, entitled to the credit of having first fully described in a classic way variola and rubeola. Indeed, so well did they do this that, excepting the etiology and consequently the treatment of these diseases, we have not learned anything further about them to the present day. During this period little or nothing was done for the advancement of science in medicine, the healing art being given up to the monks and empirics. An idea may be derived as to the status of therapeutic measures when one of the most important drugs used was a preparation of mummy dust. This was considered a very valuable remedy, and, indeed, the modern Arabians use it at the present day, mixing it with butter, forming a preparation which they call mantey. Such was the importance of this drug that a law was passed in Egypt (in the reign of Asychis) relating to the pawning of dead relatives by necessitous persons, and at another time a certain Jewish merchant of Alexandria made a fortune in "cornering" the mummy market, which at that time shipped mummy dust to the European physicians. That the ancient Egyptians knew a good deal of anatomy there can be little doubt, as, among other operations, they practised bleeding from both arteries and veins, application of the actual cautery, and also paracentesis for dropsy, *i. e.*, hydro-peritoneum. As is well known, in embalming their dead, by passing a hook through the nostrils, and by a circular movement crushing the ethmoid and sphenoid bones, they were enabled to extract through the orifice thus made not only the brain but also its membranes. In the mummy of Horseisi at the Royal College of Surgeons in London the viscera had been returned to the abdominal cavity in four distinct portions, each portion enveloped in its proper bandages. The embalmer was a kind of inferior priest or physician, and as such was reverenced and esteemed; but the dissector or cutter was not held in esteem, and immediately after he had made the incision in the side he had to run away to escape stoning by the multitude. The botanic and chemic knowledge of the Egyptians was the most valuable at that date, and it is interesting to know in connection with this that the race which was preëminent as preservers of the dead human subject do not now embalm at all. The embalming process was a very complicated one, part of which was the steeping of the body in natron for seventy days.

That mummy dust was common as a drug in the middle ages is illustrated by the following line from the "Bird in the Cage," 1633: "Make mummy of my flesh and sell me to the apothecary." The more modern Ambrose Parè mentions it as a therapeutic measure. The importance of this drug in transmitting contagious diseases must have been very great, and possibly some of our more modern diseases have as etiologic factors (by transmission), in a relative sense, the use of such drugs as mummy dust in the by-gone ages. Thus the physician of earlier times defeated his own ends. As to the origin of medicine Hippocrates says: "It was the necessity which man in the first stages of society must have felt of ascertaining the properties of vegetable productions as articles of food, which gave rise to the science of dietetics, and the discovery having been made that the same system of regimen does not apply in a disordered as in a healthy state of the body, men felt themselves compelled to study what changes of the aliment are proper in diseases." The accumulation of facts bearing on the subject gave rise to the medical art.

Hippocrates was born at Cos, one of the islands of the Archipelago, at about the eightieth Olympiad, *i. e.*, 460 B. C. He was the seventeenth lineal descendant from Æsculapius, and lived in the most advanced period of Grecian culture. He was a contemporary of Socrates and Plato, and was endowed with certain material advantages. He had a cultivated mind, and being a member of the Æsclepiæ, he possessed peculiar advantages for both theoretic and clinical study of the healing art. As there were four of the same name living about the same age, Hippocrates was called variously, "Hippocrates, the Second;" "The Great;" "The Divine Old Man," and later, "The Father of Physics;" "The Oracle of Cos," and the "Prince of Medicine."

As a writer he has given us some of the best examples of the Ionian tongue, which, however, contained certain Attic expressions. His style, although very expressive, was, like that of most of the ancients, extremely brief. After he had practised several years he cultivated the arts and sciences in travelling twelve years through the various provinces, and also in gathering information on medicines, diseases, and discoveries. We have record of his having previously studied at the famous temple of Æsculapius, in the Isle of Cos. He died at Larissa at an advanced age. Both of his sons were physicians of more or less note. To Polybus, who married his daughter, we owe the arrangement and setting forth of the famous Hippocratic records. For centuries after his death he was preëminent as an authority.

Before touching on his works perhaps it would not be out of place to mention an anecdote connected with his life. Having been called to attend the young Perdiccas, son of Alexander, King of Macedonia, who was reported to be laboring under a slow febrile disturbance, which was undermining his health, Hippocrates, observing his patient very closely, saw that when in the presence of Phila, a fair damsel of the court, he suffered considerable emotion. The diagnosis made by Hippocrates was, "a passion for Phila," and, the fair damsel not being insensible to the charms of the young prince, through the assistance of Telesphorus, the God of Recovery, the royal youngster became happy.

That Hippocrates was a most honorable man was shown by the fact that when Artaxerxes offered him large sums of money, and even entire cities, to engage him to go to Persia to relieve his armies of the plague, he sent the following reply: "Say to your master that I have ample riches; that honor will not permit me to accept his proffered gifts to render succor to the enemies of Greece." This so enraged the Persian King that he menaced the Isle of Cos with destruction unless the inhabitants would deliver up the physician, which, much to their credit, they did not do, so greatly was he esteemed. This subject has been illustrated by Girodet, and the picture presented to the Faculty of Medicine of Paris.

The people of Athens decreed a crown of gold, the right of citizenship, and a free education to the youth of Cos (as of the Athenians themselves) as a reward to Hippocrates for having stayed the plague, and one of the means of destroying this infection which he used was the building of huge fires. The Senate of Abdira sent a letter to Hippocrates to ask him to visit their renowned philosopher and scholar, Democritus, who was supposed to be affected with melancholia; but, from the description, the disease appears to have been delirium tremens.

No one thought so much of what a medical man ought to be as Hippocrates. He says, "It is the business of the physician to make new discoveries in science and to perfect such as are already made, rather than to spend his time in censuring or deprecating others;" and as he felt it to be the most excellent of all arts, this great father of physic spared not the quacks and pretenders.

As is well known, it was he who first made use of the oft-repeated quotation, viz., "That the physician ought to be the minister of nature," translating the word "minister" as servant, as it really means in the Latin. Another axiom of Hippocrates was that nature cures diseases, and he based all his methods of treatment on these lines. That he told no lies is evidenced by the quotation from Autonomus, which says that he admitted having mistaken a fracture for one of the sutures of the skull.

He was the first to cast superstition aside, and was the founder of rational medicine. In symptomatology he was well versed, and as a clinician, and on dietetics, according to his lights, he is unsurpassed to the present day.

It will perhaps not be out of place to give a copy of the original Hippocratic oath:

> "I swear by Apollo, the physician, by Æsculapius, by his daughters, Hygeia and Panacea, and by all the Gods and Goddesses, that to the best of my power and judgment I will faithfully observe this oath and obligation. The master who has instructed me in the art I will esteem as my parent and supply, as occasion may desire, with the comforts and necessaries of life. His children will I regard as my own brothers, and if they desire to learn I will instruct them in the same art without any reward or obligation. The precepts, the explanations, or whatever else belongs to the art, I will communicate to my own children, to the children of my master, and such other pupils as have subscribed to the physician's oath, and to no other person. My patients shall be treated by me to the best of my power and judgment in the most satisfactory manner without injury or violence. I will neither be prevailed upon by any other to administer pernicious physic, or to be the author of such advice myself. Cutting for the stone I will not meddle with, but leave it to the operators in that way. To whatsoever house I am sent for I will always make the patient's good the principle aim, avoiding as much as possible all voluntary injury and corruption. And whatever I hear or see in the course of a cure, or otherwise, relating to the affairs of life, nobody shall ever know it if it ought to remain a secret. May I be prosperous in life and business and forever honored and esteemed by all men as I observe this solemn oath; and may the reverse be my portion if I violate it and forswear myself."

It will be seen from the foregoing that there were specialists in surgery in the days of Hippocrates; men who did cutting for stone probably made this a special line.

On therapeutics he says:

> "As contraries cure contraries so evacuation is the remedy for repletion, and repletion is the remedy for the loss sustained by evacuation; deficiencies are to be supplied and superfluities retrenched. Contraction and relaxation are to be treated with their opposites, and fluids moving in improper courses are to be brought back unto their own channels."

Among the drugs he used were hellebore, elaterium, scammony, colocynth, mandragora, opium, etc.

That he was a skilful operator we know. He described and performed the operation for empyema, opening the chest and evacuating the pus; he was also very bold in recommending and performing trephining in fractures of the skull and for cerebral tumors. He mentions a very interesting case of caries or necrosis at the hip-joint, for which he made a large incision down to the bone and applied the actual cautery. This unfortunately was unsuccessful, tetanus supervening, and the patient dying on the eighteenth day.

His advice as to epidemics might be studied by physicians of the present day; he refers to the successful treatment of cholera by means of hellebore. In a case of hemoptysis, which was followed by pulmonary tuberculosis, the belief is stated that the former was caused by the latter, the view in fact held to-day. Concussion seems to have attracted some attention, and many are the words devoted to it; and we find a minute description of influenza, which is called epidemic cough. To Hippocrates we are indebted for auscultation, Laennec having stated that he derived most of his ideas of auscultation from Hippocrates' writings.

Gymnastics or active movement in acute diseases is condemned, and rest is advocated. Plato states that, being in ill health, he wore out first himself and afterwards many others by combining gymnastics with medicine. Hippocrates discovered the principles of derivation and revulsion in the treatment of diseases, and treated nearly all kinds of fractures and dislocations (which he had ample opportunity to study among the athletes and gladiators) by reduction and immobilization by means of waxed bandages. He gives us one of the most complete descriptions of accidents which occur at the elbow and knee-joint ever written, even at the present day.

He was very particular about the surgeon's toilet in operations, and directs that the nails should not be longer nor shorter than the ends of the fingers, and was at least cleanly in preparing for surgical work, although, perhaps, he did not go to the extreme of the modern surgeon.

In Aphorism 28 are the words: "Fumigating with aromatics promotes menstruation, and would be useful in many other cases if it did not occasion heaviness in the head," a statement that is interesting in its bearing on the use of anesthetics at that time.

The remarks on urinary sediment in the various fevers in a clinical way are good, even at the present time. The gynecologist of that day was more than primitive. Hippocrates treated cervical stenosis by dilatation with wooden or leaden tubes.

We find the records of an interesting case of a woman who had a fever and took medicine which did her no good. A hard swelling, accompanied by severe pains, occurred below the navel, which was treated by rubbing on oil with the hands, after which she had a copious discharge of blood downward and recovered. This was probably a case of ileus, as compression was resorted to for ileus at that time.

Five varieties of polypus nasi are described, and in the treatment are recommended the ligature, the knife, and the cautery; and there are also given most elaborate and extensive descriptions of accidents which occur in seventh-month and eighth-month births.

Until the days of Delpech and Stromeyer no one entertained such sound ideas on orthopedic surgery as Hippocrates. He treated club-feet by manipulation, and when human strength failed resorted to mechanical devices.

GALEN.

Claudius Galen was born in 131 A. D., at Pergamus, situated in Asia Minor (a city noted for its manufacture of parchment, from which it derived its name), and in the fifteenth year of the reign of the Emperor Adrian. He was the son of Nicon, an able and worthy architect, who gave him an ample education. In this way he became familiar with the doctrine of the Stoics, who were taught to submit the body to the mind; their passions to their reason; to consider virtue as the only good and vice as the only evil; all things external as things indifferent; the Academics, Peripatetics, and the Epicureans. He finally applied himself to the study of medicine at the famous schools of Smyrna, Corinth, and the great school of the age at Alexandria, where he studied, particularly, anatomy. Before he was twenty-one years of age he had composed some medical works. He visited Lemnos to investigate its celebrated earth, and also Syria to inspect the, at that time, renowned balsam of Syria. As far as his medical practice was concerned, he did not always tread an easy path, as many of the celebrated physicians of the day were jealous of him. His enemies taunted him as being one with theory but not practice. That he was highly esteemed by the more influential nobles of the day is evidenced by the fact that he was thought a great deal of by Bœthus, a consul whose wife he had treated successfully for fever, and be it known that in the records it is set forth that in the presence of this Boethus he made a dissection, exhibiting and demonstrating the organs of respiration and of the voice. After five years' residence in Rome he journeyed from that metropolis, and returned to his native city. This action was probably due to the persecutions that he experienced from his fellow-physicians, whom he had tried to lead back to the right path, viz., that of following the precepts and principles of Hippocrates, *i. e.*, to have them become students of nature. He was sent for by the Emperors Marcus Aurelius and Lucius Verus from Aquelliæ, but the plague breaking out they had to remove with a small retinue, Lucius Verus dying of hemorrhage on the road, and his body being sent to Rome. Galen arrived there soon after. At another time, being invited to Germany, he refused, and becoming apprehensive of foul play, retired to the house of Commodus, the Emperor's son, who was attacked by a severe fever, and was cured by Galen.

Galen's vast superiority over his colleagues was undoubted. The Princess Faustina says: "Galen shows his skill by the effects of it, while other physicians give us nothing but words." One of the first steps toward acquiring a reputation was undoubtedly the successful discovery of the royal indigestion of which he cured the Emperor, and who declared: "We have but one physician; Galen is the only man of the faculty." An idea of the royal appetite of that day may be derived when the statement is made that the Emperor Vitellius consumed in seven months food to the value of thirty-five million dollars.

Galen died in his seventieth year. He wrote not only on medicine, but on grammar, philosophy, and geometry, and it is to be regretted very much that a number of his original manuscripts were lost at the fire of the Temple of Peace at Rome. The best edition of his entire works in Greek and Latin is by Rene Chartier, published at Paris in 1679, in thirteen volumes, including also the works of Hippocrates. On the title-page of these Galen is referred to as "Archiater" (chief healer) or "Physician to the Emperor." He stands almost isolated and alone for knowledge of anatomy among the ancients, and asserts its importance as the foundation of all useful medical knowledge. It has been said that Galen could not have enjoyed the dissection of the human body, the Roman laws being very severe against those who should mutilate the bodies of the dead; but it must not be forgotten that he could have dissected the bodies of apes and of slaves and of the enemies of Rome taken in battle. Of course, his knowledge of osteology was very great, almost equivalent, indeed, to that we possess at the present day. He also had great opportunities for the study of accidents, which the gladiators (to whom he was physician) sustained during the mortal combats in which they took part.

Galen paid particular attention to hygienic remedies, such as air, food, motion, sleep, and emotion. He held that the end of medical science was to preserve the parts of which the body is composed in a state of nature, and to endeavor to reëstablish their functions when disordered, and hence the necessity of a knowledge of physiologic anatomy. The parts of the body he considered as simple or compound, similar or organic, having for their elements fire, air, earth, and water, of which the qualities are heat, moisture, dryness, and cold. While they are balanced health is maintained; when they are disturbed, disease results; and health, therefore, according to Galen, depends on the just proportion of the four elements. He admits, with Hippocrates, four humors: Blood, phelgm, yellow bile and black bile, corresponding to the four temperaments. He speaks of three kinds of spirits, natural, vital, and animal, corresponding to the same number of faculties and functions. The natural spirit he appropriates to the life in particular for the generation, growth, and nutrition of the body; the vital to the heart, for the elaboration of heat, and the animal to the head, whence proceed sensation and motion. But he denies not particular functions to particular organs, and looks upon nature as the prime factor of all, and, with Hippocrates, recommends the physician to be the minister of nature.

Galen was particularly good in prognostic acumen, and boasted not a little of it. He paid the most minute attention to symptomatology, and would probably have made a more accurate prognosis, notwithstanding his deficiency in knowledge of some of the diseases of the present day, than a great many of our so-called specialists, such was his attention to the great mistress, Nature. He paid particular attention to the reciprocal action of the heart, and to him we owe the terms used at the present day, "systole" and "diastole."

He practised surgery in the early part of his career, and writes of tumors, wounds, ulcers, fractures, dislocations, and other surgical diseases.

His physiologic experiments on living animals are good even at the present day. He described the function of the brain and nerves, maintained that sensation and volition resided in the nerves, and that through their agency the presiding principle, the soul, derives it action. He infers that the brain is the seat of this presiding principle. His ideas on the anatomy of the nerves were most erroneous, as he refers to them as tubular. He may, however, have used the term tubular (tuba, a trumpet) to demonstrate more comprehensively their transmitting power. His doctrines, without much change, were held to be correct down to the sixteenth century, Vesalius being the first to deny his views. His works are very voluminous, and comprise nearly five-hundred volumes on medicine alone. He was not a specialist in any sense of the word, being what would be called at the present time a "good all-round man," except perhaps that he was particularly learned in the nature of poisons or toxicology.

Galen treated not symptoms, but as far as possible causes. He practised phlebotomy in a very rational manner. Instead of stimulation in adynamic fevers by artificial means, he recommended a brisk rubbing of the skin until it should be hot, thereby getting the same effect from peripheral stimulation. In malaria he used pepper extensively as an antiperiodic. He frequently made the error of mistaking the pyrexia caused by some local inflammation for that of an essential fever. Clysters were used in acute enteritis, and great importance was attached to constitutional treatment in a great many apparently local diseases.

He pointed out that in the nervous system opposite causes produced somewhat similar conditions. For instance, loss of blood will produce delirium, convulsions, and paralysis, while plethora will cause apoplexy, convulsions, and paralysis. He said of epilepsy that this disease is never cured in those past the age of puberty. In pulmonary tuberculosis he used the modern "cure de lait," sending his patients to the Bay of Sorento, where they could obtain milk fresh and warm from the cow. He distinguished between the slow non-inflammatory and bronchitic form and the acute inflammatory ulcerative form, making a somewhat similar classification to that of Niemeyer of the present age.

INTESTINAL APPROXIMATION, WITH REPORT OF A CASE OF GASTRO-ENTEROSTOMY AND ONE OF END-TO-END APPROXIMATION.[1]

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AT the request of your President I herewith present the report of two interesting cases in which I made use of the Murphy button for anastomotic purposes between portions of the alimentary tract. The fact that both cases resulted fatally does not deter me from reporting them, for it is from our failures that we often gain much information.

CASE I.—James G. came under my notice late in August, complaining of constipation, loss of appetite, occasional vomiting, a moderate loss of flesh, and a feeling of languor. A superficial examination revealed nothing of an organic nature. Various lines of medical treatment were used, but without improvement, and the man was sent to St. Joseph's Hospital about August 27th. When admitted to the hospital he was very much constipated; large doses of magnesium sulphate, oleum tiglii, etc., had little or no effect on him; enemata were resorted to daily to produce an evacuation; this extreme constipation continued; nausea and vomiting came on as a constant symptom; he rapidly lost flesh; he could retain nothing on his stomach but very small quantities of beef-juice. There was no rise in temperature. Examination at this time showed a stomach considerably dilated, reaching down nearly to the umbilicus; there was no pain or tenderness. The noticeable feature of the examination was the great peristaltic action of the stomach-walls; the wave of contraction could be seen beginning at the cardiac orifice and travelling slowly along the greater curvature until it reached the pylorus, where it stopped abruptly; at times the contraction assumed an hour-glass character. Upon two separate examinations I could feel at the pylorus, just as the peristaltic wave reached that point, a hard mass, ill-defined in shape and size. I made a diagnosis of tumor of the pylorus and advised an operation, which was refused by the patient and his friends. The patient was examined by a number of surgeons, among them being Dr. Hartman, of Chicago. It was agreed by all that the case was in all probability one of carcinoma of the pylorus, although some symptoms were lacking to make a perfect history; operation was advised by all.

On September 12th the patient finally agreed to the operation, and accordingly on the morning of the 13th, with the assistance of Drs. L. E. Lemen and J. W. O'Connor, I operated. I made a median incision, found a hard, nodular mass at the pylorus, extending from that point along the walls of the stomach for a distance of three inches; the duodenum was isolated with very great difficulty on account of its contracted condition. An opening was made in the duodenum at a point about opposite the entrance of the ductus communis choledochus, and one-half of a medium-sized Murphy button inserted; the other half was inserted in the stomach on the posterior surface about three inches and a half from the pylorus; the two portions of the button were then firmly pressed together. The abdominal cavity was flushed out with a normal salt-solution and the abdominal wound stitched up with silkworm-gut and the dressings applied. The man recovered from the anesthetic well, suffered no pain, and was conscious. The nausea and vomiting almost entirely ceased; the temperature became subnormal, and remained so until death took place on the fourth day, the patient being conscious to the last; the pulse ranged from 120 to 160. Nourishment was administered by the rectum after the operation, by means of beef-peptonoids, coffee, and eggs.

An autopsy was made twelve hours after death in a very great hurry; the stomach and duodenum were the only parts which were removed; the button was found in place as described; the stomach-walls were thickened to about three times their natural thickness, the mass extending from the pylorus toward the cardiac orifice, a distance of about three inches; the pyloric orifice would not admit the tip of the little finger; the stomach was considerably dilated, the duodenum contracted; there was apparently no adhesion between the walls of the stomach and duodenum at the point where the button had been inserted.

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[1] Read before the Denver and Arapahoe Medical Society, December 11, 1894.

I have been able to find records of twenty-one cases of gastro-enterostomy done with the Murphy button. These have not all been published in detail, but have been collected in tables by various writers on this subject; to this number I would add this case, the first in this State, making twenty-two in all. Of this number twelve died, the time of death after the operation varying from a few hours to forty-six days. One died from continued hemorrhage, nine from exhaustion, one from broncho-pneumonia, one from septic peritonitis, from the fact that the tissues slipped from the grasp of the button, thus allowing the contents of the stomach and duodenum to escape into the peritoneal cavity. This would make the percentage of deaths 54.54. There have been, in all probability, other fatal cases which have not been reported, for there is a disposition among surgeons not to report their unsuccessful cases, and which if reported would swell the percentage of deaths. The results are certainly not very encouraging, and from a letter recently received from Dr. Murphy I infer that he is rather inclined to discourage operation on these cases except under the most favorable circumstances.

The operation of gastro-enterostomy is, of course, only designed for temporary relief to the distressing symptoms of nausea, vomiting, and progressive exhaustion. Unfortunately a large percentage of these patients do not give their consent to operation until the exhaustion is so far advanced that the chances for recovery from operation are small. Had this patient consented to operation at the time it was first suggested to him he might have survived.

Intestinal approximation is a subject that is being much talked about, and our journals are full of articles bearing on it. The Murphy button has come in for its share of consideration, along with the various other mechanical methods of procedure, such as the Senn plates, potato plates, Robinson's hard-rubber plates, Abbe's catgut rings, etc. It is not my purpose to discuss the comparative virtues of these various measures, since I have nothing new to offer on the subject. From my own experience I can say that the button is an ingenious device which enables us to make an anastomosis quickly, thus shortening the time of exposure of the peritoneal contents to the atmosphere, and this is an important factor in this part of the country, for it is held by many that the peritoneal membrane cannot stand exposure as long in a dry atmosphere as it can in a moist one. The operation by means of the button requires a minimum amount of manipulation of the parts for its application, and when once properly applied it is secure. When the button escapes, as it does in the course of from fourteen to twenty days, it leaves a round, clean-cut and good-sized hole, which is not liable to contract subsequently. For this particular operation of gastro-enterostomy Dr. Murphy has devised an oblong button, but I am informed that he has returned to the use of the round button.

Every surgeon can learn many things from his own operations, as well as from those of others. In my small experience in this class of cases several points have been impressed on my mind. One is that one should not undertake to operate against time; the matter of a few seconds more or less makes no material difference. In making the incision for the introduction of the button one should not make it more than two-thirds the diameter of the button; the button can be gradually worked through a small hole; one should be sure that the silk that is used for the drawstring is strong enough to stand considerable strain, and an ordinary cambric needle should be used for its introduction instead of a surgeon's needle; when the wall of the viscus is drawn up one should be certain that it is around the stem and not outside the spring, a thing that I have known to happen. One should be sure that the two portions of the button are pressed firmly, but not too firmly, together; if pressed too hard, it might cause the tissues to be cut through before adhesion had formed. There are imperfect buttons on the market; therefore every button should be carefully examined before being used; the spring should be neither too strong nor too weak, and the opposing surfaces should be broad and the spring-catch should be perfect.

CASE II.—Peter G., a Finlander and a coalminer, came to the hospital October 17th, having been injured in a coal-mine on October 14th, by having three tons of coal fall from the roof of a chamber on him while he was in a stooping posture. The great weight forced him to the floor, causing him to make what a contortionist would call a "split." When I saw him first he had a temperature of 101.5° F., and a pulse of 140; the belly was considerably swollen, tympanitic, and painful on pressure. The inner side of the left thigh and the lower portion of the abdominal wall on that side were ecchymotic and emphysematous; there was a fracture of the pelvis two inches to the left of the symphysis; a wound in the perineum two inches long communicated with the seat of fracture. The diagnosis was made of a compound fracture of the pelvis, acute peritonitis, with, probably, a perforation of the gut. The rapid development of peritonitis and symptoms of collapse, together with the presence of air in the subcutaneous tissues at the seat of the fracture, led to the supposition that a sharp spicule of bone had penetrated the parietal peritoneal membrane and had produced a perforation of the gut. Although the case offered no great encouragement for a successful operation, an operation was decided upon. With the assistance of Dr. J. W. O'Connor the abdomen was opened in the median line, the gut examined carefully, and, after a good deal of searching, a circumscribed abscess was opened on the right side midway between the crest of the ilium and the last rib; this abscess-cavity contained pus of a fecal odor, due, as I found, to a perforation in the small gut one-fourth of an inch in diameter; no other abnormal condition was found within the abdominal cavity, with the exception of a simple peritonitis. Two inches of the gut were excised and an end-to-end anastomosis was made with a large-sized Murphy button. The intestines were so distended by gas that it was impossible to replace them within the abdominal cavity without first letting some of it out; so a small incision were made and, after a large quantity of gas was allowed to escape, a stitch was introduced to close the hole. The abdominal wound was stitched up and the patient died within an hour. The autopsy revealed a fracture of the pelvis two inches from the symphysis on the left side, communicating with the perineal wound. No wound of the peritoneal membrane could be found. The retroperitoneal tissues were filled with blood; all of the intra-abdominal organs were normal except at the place where the anastomosis was made; this point was found to be in the small gut two feet from the ileo-cecal valve.

The question in this case was the origin of the perforation, whether it was produced at the time of the accident, whether the gut was contused sufficiently to cause a subsequent necrosis of the wall, or whether the perforation was the result of a preexisting pathologic condition of the intestinal wall and entirely independent of the accident? No microscopic examination was made of the section of gut which was removed, as it was unfortunately lost. There was no external, visible sign of injury on the right side where the abscess-cavity was found; the autopsy showed no solution of continuity of the peritoneal membrane. It was my belief that the perforation was the result of processes which were in existence before the accident was received. The air in the subcutaneous tissue must have been drawn in by contraction of the muscles in the immediate neighborhood.

The technique of an entero-enterostomy is very simple, and has been so many times described that I will not dwell on it at this time. I regret that both cases resulted fatally, but it is to be said in behalf of the operator that both were extreme cases, not at all suited for operation with any great hope of success. Should another case present itself for operation in the same condition as the first one I would hesitate about operating. The second case was particularly hopeless, as acute peritonitis had set in, and the heart's action was bad; there were two sources of septic infection, the abscess-cavity and the perineal wound; and finally the nationality of the patient was against success, for I find that Finlanders as a class do not stand injury and surgical shock at all well.

California Building.

THE ASIATIC LUNG-DISTOME IN THE UNITED STATES.

By HENRY B. WARD, Ph.D.,
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In 1893 I reported[1] the occurrence of the Asiatic distome in the lungs of a cat examined in Ann Arbor, Mich. This was the first reported find of this species on this continent, and the possibility of its being a permanent guest in this country was so serious that I urged a careful examination of all cases of lung-parasites in the domestic animals, with a view to ascertaining whether this might be an isolated instance, or whether the parasite was actually established within our land, for it is true that the Chinese, among whom the parasite is very common, regard cats as great pets, and this single cat, of whose antecedents nothing was known, *might* have been brought to this country as a pet, and have wandered from its owner afterward.

In an extract[2] sent me this fall was a notice of an unknown distome found in the lungs of a dog. The description led me to suspect at once that it was *Distoma Westermanni*, and in response to my request Prof. Kellicott very kindly sent me some specimens for examination. The study of these shows beyond question their identity with the form found in Ann Arbor and with the Asiatic species. The animal from which they were taken was "a shepherd dog from the country near Columbus, Ohio." Both the host and the locality from which it came render the possibility of its having been imported from the East practically *nil*, and to my mind demonstrate the establishment of the parasite in this country.

The existence of a new human parasite within our land, and especially of one so dangerous in its home as this distome, is a matter of sufficient importance to the medical profession to call for the publication in this place of some facts concerning its anatomy and development, as well as its diagnosis and frequency, together with other biologic data, especially as references to it are wanting in most American works.

In 1880 Bälz, a European physician, reported the common occurrence of parasitic hemoptysis in

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[1] In the Centralblatt für Bakteriologie und Parasitenkunde, Bd. xv, pp. 362–64; also in the Veterinary Magazine, vol. i, pp. 355–59.

[2] D. S. Kellicott: "Certain Entozoa of the Dog and Sheep." Trans. Ohio State Med. Society, 1894.

Japan, which, though ascribed to tuberculosis, was due, he thought, to a gregarine. Soon afterward he recognized the objects which he had taken for psorosperms as distome eggs, and was able to publish in 1883 a description of the parasite under the name of *Distoma pulmonale.* Later Leuckart demonstrated the identity of this form with a distome from the lung of a Bengal tiger that had died in the zoologic gardens at Amsterdam. This distome had been carefully studied and described in 1878 by Kerbert[1] under the name of *Distoma Westermanni*, which has the right of priority, and must be retained as the name of the parasite according to the established laws of zoologic nomenclature. On its presence and importance among the Eastern nations there has appeared a long list of papers largely inaccessible to the American physican. Dr. C. W. Stiles, helminthologist of the Bureau of Animal Industry at Washington, D. C., published,[2] in connection with a note on the original discovery of this parasite in the United States, a valuable bibliography of the species. The most important of these articles are those of Leuckart[3] and Yamagiwa,[4] from which, together with the papers of Kerbert and Stiles, and my own studies on the forms found in the United States, the following account was prepared.

FIG. 1.

FIG. 2.

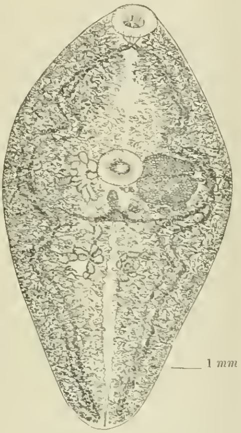

FIG. 3.

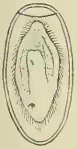

FIG. 1—*Distoma Westermanni*; ventral and lateral views (after Leuckart). Natural size.

FIG. 2.—*Distoma Westermanni* from the ventral surface. Specimen from Columbus, O., mounted in balsam. Original. Magnified 5½ times.

FIG. 3.—Egg of *D. Westermanni* with embryo. (From Leuckart after Nakahama.) Magnified 225 times.

Distoma Westermanni Kerbert 1878. Synonyms: *D. Ringeri* Cobbold, 1880. *D. pulmonis K., S.* and *Y.*, 1881. *D. pulmonale* Bälz 1883. *Mesogonimus Westermanni* Railliet 1890.

Length, 8 to 10 mm. (Leuckart); 11 to 16 mm. (Ward); 15 to 20 mm. (Kellicott.) Breadth, 4 to 6 mm. (Lkt.); 5 to 7 mm. (Wd.); 6 to 8 mm. (Kct.). The body is thick and plump, somewhat resembling a dipterous larva in shape (Fig. 1), with the posterior end more pointed than the anterior, and the ventral surface much flatter than the high arched dorsal. In color the living distome is deep-red or reddish-brown, darker along the middle of the body; the alcoholic specimen is dark steel-gray at the sides, with a brighter band along the center; the black dendritic acini (Fig. 2) of the vitelline gland can be easily recognized with a hand lens. The cuticula is everywhere covered by broad flat spines of varying length and size, which are lacking in poorly-preserved specimens.

The suckers are notably small and often difficult to see. The oral sucker has a mean diameter of 0.53 mm. (Lkt.), or 1.2 mm. (Wd.) for the American variety. It is not situated at the exact anterior extremity of the body, but is slightly subterminal, and its orifice is directed downward. The ventral sucker, or acetabulum, is a little larger than the oral, being 0.65 to 0.75 mm. in diameter (Lkt.), or smaller, 0.75 to 1 mm. (Wd.). It will be noticed that the oral was smaller in the specimens examined by Leuckart, whereas in those from Ann Arbor the reverse obtained. In the specimens from Columbus the oral suckers average 0.864 by 1.017 mm. and the ventral 1.17 by 1.31 mm., relatively the same as in the Asiatic form, but absolutely much larger. I should like to emphasize in this connection the extreme uncertainty of description based solely or even largely upon the size of organs as variable as a purely muscular sucker. Such descriptions are unfortunately very common in various quarters at present, and serve too frequently as a model for the description of new forms. For the accurate description of a species topographic relations are essential, as they are also for any identification of it subsequently. In no other way can a form be positively identified, and hence a short summary of these relations in *Distoma Westermanni* is here presented.

The general anatomy of the internal organs can easily be studied from specimens lightly stained and mounted in balsam (compare Fig. 2). Connected with the oral sucker, and lying partly at least upon it, is the prominent pharynx; it is about half as long as the diameter of the oral sucker. The esophagus, which follows directly upon the pharynx, is short, and from its end arise almost at right angles the two crura intestini, which extend in a somewhat winding course to the posterior end of the body. The clear, irregular band through the center of this part of the worm indicates the position of the excretory sinus, a longitudinal tube varying much in caliber; it is filled from numerous canals along its sides, and opens almost at the posterior tip of the body.

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[1] Zool. Anz., i, pp. 271–73; later also in Archiv f. mikr. Anatomie, Bd. xix, pp. 529–578.

[2] Johns Hopkins Hospital Bulletin, No. 40, May, 1894.

[3] Parasiten des Menschen, ii. Aufl., Bd. i, pp. 404–440.

[4] Virchow's Archiv f. pathol. Anat. u. Physiol., Bd. cxxvii, pp. 446–456.

The tissue of the body just below the surface is filled by the numerous acini of the vitellaria or yolk-glands, which impart to the lateral areas their dark, crowded appearance. These glands empty by longitudinal ducts into the two transverse ducts just behind the acetabulum. At the center, where these transverse ducts unite, is situated the vitelline reservoir. The ovary is a lobed organ at the right of the center immediately adjacent to the acetabulum; and a corresponding position on the left is taken by the condensed coils of the uterus, which are filled with yellow, thin-shelled eggs.

The testes, two in number, are located, one on either side of the excretory sinus, half-way from the acetabulum to the posterior end of the body. They are deeply-lobed organs, and are indistinct in outline in unstained specimens. Their ducts, which are not represented in Fig. 2, can be made out only with difficulty. They run obliquely toward the median side of the uterus coil, where they join and open at the common genital pore, which is situated immediately behind the acetabulum and a little to the left of the median line. There is no prominent copulatory organ in this species.

The eggs, which may be seen in enormous masses in the uterus, or found free on the surface of the worm, or in the immediate vicinity of it, are oval, yellow, and provided with a thin shell, which has a cover (Fig. 3). They measure 0.08 to 0.1 mm. in length by 0.05 mm. in breadth (Lkt.), or 0.096 to 0.118 by 0.048 to 0.055 mm. (Wd.). The oval ciliated embryo develops within the egg some time after it escapes from its host. "The fate of these embryos," says Leuckart (*loc. cit.*, p. 436), "is at present entirely unknown. That they wander directly into the later host contradicts all analogy. They will probably, as is known of other forms, next seek an intermediate host, and in this produce a generation of cercariæ, which then for the first are brought in one manner or another into a man, whether directly into the lung, as Bälz assumes, is at least questionable. Much more probable is it that the residence in that organ is the result of a further migration."

Distoma Westermanni has been found in the lungs of the tiger, cat, and dog, as well as man. The description given by Kellicott (*l. c.*, p. 3) will give a good idea of the general appearance of the infected organ. He says: "On opening the thorax the lungs were found to present unusual appearances: small brown spots were thickly distributed over the entire surface of the pleura, and scattered over the lobes were many tumor-like swellings of a deep-red color, contrasting strongly with the general pink of the lung. The tumors were mostly about the roots and along the dorsal borders of both sides. On cutting open the tumors distomes were found within; some were surrounded by a capsule, while others were burrowing after the fashion of the large distomes in the livers of sheep and cattle. These burrows were filled with débris and pus." Yamagiwa, who was a member of the Royal Japanese Commission for the investigation of the disease in that country, has given an account of the appearance of the human lung in several cases of post-mortem examination; but the general characters were the same. He also calls attention to the occasional discovery of the parasite encysted in the liver, peritoneum, mesentery, and even in the cerebral hemispheres. In the lung they appear to be confined to the periphery of the organ and inclosed in special cysts which contain not only the distomes, but also eggs and masses of Charcot's crystals. These cysts communicate with the bronchi by fine openings through which the eggs and the crystals already mentioned reach the exterior in masses of mucus and blood. The number of eggs discharged in the course of a single twenty-four hours by a patient who had suffered thirteen years from the disease was estimated to be *not less than twelve-thousand!*

Symptomatology. When in the lungs, its common abiding-place, the distome gives rise to periodic hemoptysis and chronic cough, with rusty mucoid expectoration. The condition of the patient remains good, and almost no abnormal sounds can be detected by percussion of the chest. Yamagiwa says that the general appearance of the expectorations is identical with that in tuberculosis, and, as a matter of fact, the disease was formerly diagnosticated as tuberculosis in Japan. The presence in the sputa of the eggs already described and figured is the only characteristic symptom, and positive diagnosis will rest then on the microscopic examination of the sputa, which will reveal, in case the parasite be present, numbers of its yellow-brown egg-shells. When one considers the prevalence of so-called tuberculosis in this country, and the frequently careless diagnosis of many, it is not at all unlikely that cases of this parasite may have been mistaken for tuberculosis, as Yamagiwa says was formerly the case in Japan. And this is the more probable, as the presence of such lung-parasites and the concurrent symptoms are doubtless unknown to many, and to most others are a matter of interest rather than important enough to deserve their careful attention, even though they may have heard of its occurrence in the far East.

The accidental rupture of a large bloodvessel by the destruction of the lung-tissue, and, in the severest cases, general anemia seem to be the only dangers to be feared. On removal from an infected district patients have apparently entirely recovered. During the continuance of the disease almost every patient suffers from malaise.

With regard to the region in which this parasite exists it may be said that Japan, China, Corea, and Formosa are known to be seriously infected. In one district of Japan, according to Bälz, almost every inhabitant suffered. In Formosa 15 per cent. of the entire population was infected. No doubt the disease is at home in the entire eastern portion of Asia, but exact knowledge of this region is lacking. According to the report of the Japanese Commission, those affected are largely laborers, and men rather than women.

Of the means by which the parasite reaches the lungs nothing is known, and the statement of Yamagiwa that the drinking-water is at fault rests on rather uncertain ground: the observation that in a certain town those affected drank from a single stream.

In regard to the parasite in our own country it is not necessary to emphasize the importance of immediate investigation as to the region in which it is established, and of efforts to stamp it out, or at least to keep it within its present bounds. No less important is a full knowledge of its life-history, that the means of infection may be accurately known, and by wide publicity its spread be prevented so far as is possible. For both of these ends all cases of the disease should be reported with as little delay as possible, and care should be exercised to investigate every case of lung-parasite, so that an accurate opinion as to its character may be given. In any case I shall be glad to receive specimens of suspected parasites for determination.

CLINICAL MEMORANDA.

FURTHER REPORT OF TEN CASES OF TYPHOID FEVER TREATED BY THE CHLORIN-QUININ SOLUTION,

Recommended by J. Burney Yeo, M.D., of London, England.

BY EMIL KING, M.D.,
OF FULDA, MINN.

BEING very favorably impressed by an article in the number of the *American Journal of the Medical Sciences* for June, 1894, by Dr. J. Burney Yeo, on "The Treatment of Fevers, Especially Enteric," I determined to test this treatment at the earliest opportunity. While nearly all physicians admit the success attained by the Brand bath-treatment, yet most of us cannot employ it on account of the unreasonable prejudice against it among the laity and on account of lack of facilities to give it. We must, then, employ a rational and symptomatic treatment based on the pathology of the disease.

In all of my cases but one, in which the solution was taken early in the disease and according to directions, the result was very good. In all of these cases the temperature seldom ran above 102° F., the tongue was less foul than is usual, and there was more desire for food. In none of my cases was delirium or stupor noticed. There were no complications except a relapse in one case. The good results seem to me to be due to the disinfection of the intestinal contents, consequently with less absorption of toxic material and lessened ulceration in the bowel. The antiseptics administered in this disease are legion, but all I think are inferior to chlorin, as they are not as soluble, and do not permeate the intestinal contents so thoroughly. I submit brief histories of the following ten cases.

CASE I.—J. R., a German, aged twenty-seven years, married, was by occupation a farmer. The symptoms of the disease came on gradually, and consisted of headache, coated tongue, anorexia, pain in the arms and legs, and constipation. I saw him for the first time on September 19th, on the sixth day of his illness. In addition to the foregoing symptoms his temperature was 103°, and he had pain on pressure in the right iliac and umbilical regions, with sleeplessness. Treatment was as follows: rest in bed, a diet of diluted milk and beef-broth, cold and wet applications to the head, calomel and sodium bicarbonate in small doses until the bowels moved freely, and then the chlorin and quinin solution, a tablespoonful diluted in water, was given every two hours. The temperature never rose above 102° F. The disease ran a mild course, and convalescence began at the end of the third week of illness. Recovery was rapid.

CASE II.—M. B., a female, a German, aged twenty years, was a farmer's wife. The symptoms came on gradually, and consisted of headache, sleeplessness, anorexia, a heavily coated tongue, diarrhea, and pain in the back, arms, legs, and, on pressure, in the right iliac region. I saw the woman for the first time on September 20th, on the eighth day of her illness. I found a temperature of 103.7° F., and on pressure gurgling and tenderness in the right iliac fossa. Treatment consisted in a diet of diluted milk, water, weak lemonade without sugar, and weak tea, powdered opium and bismuth subnitrate until the diarrhea lessened, and of the chlorin-quinin solution a tablespoonful every two hours. The fever subsided, headache and pains lessened, but the vertigo continued into convalescence. A slight bronchitis developed, which however subsided without treatment. Convalescence began on October 3d, and continued without interruption.

CASE III.—A. G., a German, male, aged twenty-nine years, single, was by occupation a merchant. Symptoms began gradually, and consisted in weariness, anorexia, a heavily coated tongue, and very foul breath, thirst, slight diarrhea, and pain in the abdomen. I saw the patient for the first time on September 20th, on the fourth day of his illness. In addition to the symptoms noted he had a temperature of 103.5°. He was ordered rest in bed, a milk-diet, water to drink, opium for the diarrhea, and of the chlorin-quinin solution a tablespoonful every two hours. Convalescence began on the eighteenth day of his illness, resulting in rapid recovery.

CASE IV.—W. W., a male, an American, aged twenty-four years, married, was by occupation a surveyor. The symptoms developed gradually, with anorexia, a coated tongue, thirst, pains in the arms, legs, and iliac region, constipation, slight tympanites, and sleeplessness. I saw him for the first time on September 23d, on the seventh day of his illness. The temperature was 104°. I ordered absolute rest in bed, a milk-diet, calomel, and sodium bicarbonate in small doses until the bowels moved freely, and of the chlorin-quinin solution a tablespoonful every two hours. A cold pack was applied once or twice during the night for a week, with very good results. From the fourteenth day the temperature never went above 102°. Convalescence was established on the twentieth day, and continued without interruption.

CASE V.—F. B., a German, male, aged twenty-five years, a farmer, married, had symptoms which came on gradually and consisted of headache, anorexia, a coated tongue, thirst, constipation, and slight tenderness in the right iliac region. I saw him for the first time on September 23d, which was the third day of his illness. His temperature at this time was 103.4°. I ordered rest in bed and a diet as in the preceding cases. His headache being very severe, I ordered a few doses of Dover's powder, also cold and wet applications to the head. The chlorin and quinin solution, a tablespoonful, was ordered every two hours. The case ran a mild course, convalescence being established early in the fourth week and continuing favorably.

CASE VI.—W. P., of German parentage, a male, aged twenty-three years, single, was a brother of Case V. The symptoms in this case were very much like those of Case V except that there were more sleeplessness, a higher temperature (104°), and a severe bronchitis with threatened pneumonia, of which he had a severe attack two years ago, but which readily yielded to prompt treatment with tincture of veratrum viride, and sharp counter-irritation. The chlorin and quinin-solution was given as in the preceding cases. Convalescence began on the twenty-fourth day. He was exceedingly weak, and brandy was ordered, this being the only case in which alcoholic stimulants were found necessary. Recovery was somewhat slow.

CASE VII.—J. P., of German parentage, a male, aged twenty years, single, a farmer, had symptoms beginning with headache, pains in the arms, legs, and back, a coated tongue, anorexia, and sleeplessness. I first saw him on October 2d, on the third day of his illness, when the temperature was 102.3°, and slight tenderness on pressure in the right iliac fossa. The treatment was the same as in the former cases. The disease ran a very favorable course, convalescence being established by the seventeenth day, the appetite returning rapidly, and recovery was prompt.

CASE VIII.—M. P., a female, German, married, and mother of twelve children, aged fifty-three years, was in a bad physical condition through constant nursing and the care of a large family. The disease came on gradually with vertigo, headache, pains in the back, coated tongue, and anorexia. I saw her for the first time on October 6th, on the fourth day of her illness. The temperature was 104°, there were some tympanites and much tenderness in the abdomen. The treatment in this case varied in the omission of the quinin, which caused severe tinnitus. The duration of the illness was four weeks, convalescence being somewhat protracted but finally complete.

CASES IX and X.—C. H. and M. H., brother and sister, of German parentage, aged twelve and fourteen years respectively, in whom the disease came on at the same time and gradually, the symptoms consisting of weariness, coated tongue, and anorexia, with a tendency to drowsiness. I saw them for the first time on October 8th, on the seventh day of their illness. The boy had a temperature of 104°, the girl 103.2°. Both had pain in the abdomen on pressure. There were constipation and tympanites in both. I ordered rest in bed (having found them sitting up), milk-diet, calomel, and sodium bicarbonate in small doses to move the bowels, cold and wet applications to the head, orders to give a cold pack and sponging being refused by the parents. The solution of chlorin and quinin, a dessertspoonful, was ordered every two hours and diluted with water. Convalescence began on the twenty-third day of the illness, resulting in perfect recoveries.

I could lengthen this clinical report by adding five more cases successfully treated by this method. Only one of the entire number of cases had a relapse, and this case has now perfectly recovered. I hope that this treatment will be given a thorough trial in some hospital, and I firmly believe that the results, when the treatment begins early, will be as good as those obtained by the Brand method.

PRIMARY LARYNGEAL DIPHTHERIA SUCCESSFULLY TREATED WITH DIVIDED DOSES OF BEHRING'S ANTITOXIN NO. 1.[1]

BY H. H. FREUND, M.D.,
OF PHILADELPHIA.

THE patient was a male child one year old, weighing 15 pounds, seen on the evening of December 14, 1894, at 6 P.M., with a history of having been croupy, restless, feverish, and breathing rapidly for the previous twenty-four hours. Examination of the fauces revealed an intense redness of the pharynx; and surrounding the rima glottidis the characteristic appearance of the diphtheric membrane was evident at this examination. No fetor could be detected in the breath, nor was any lymphatic glandular enlargement present. At the first examination the pulse was 136, the temperature 99°, and the respiration 26. Six hours later, 4 c.c. (♏ 64) of Behring's antitoxin were injected in the scapular region, slight massage soon dispelling the swelling. Eight hours after the first injection of antitoxin the pulse was 160, the temperature 101.4°, and the respirations 40. The little patient was restless during the night, and on the following day no marked improvement could be detected in its condition. The dipththeric membrane had extended upward into the posterior wall of the pharynx as much as a half-inch. Twenty-four hours after the first injection, a second one was given to the amount of 3 c.c. (♏ 48) near the site of the first injection. During the second night the child was easier, the whole condition took a more favorable turn. On the morning of the second day the pulse was 126, the temperature 100.2°, and the respirations 28. At the end of the second day, the third and last injection, consisting of 3 c.c. (♏ 48), was made near the site of the other two injections. On the morning of the third day the nurse reported that the child had had a good night, taking nourishment well and sleeping quietly. Examination revealed a total disappearance of all visual diphtheric deposit.

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[1] Read before The James Aitken Meigs Medical Association.

The fever-chart in this case does not show a decided drop in the temperature after the injections, which corresponds with the observations of others who have used this form of treatment.

During the period dating from the use of the first injection to that of the last, forty-eight hours had elapsed, and in this time other systemic and local treatment had been used, consisting of divided doses of calomel, salol, and a mixture of seneg, ipecac, tincture of nux vomica, ammonium carbonate, with the use of a fine stream of hydrogen dioxid directed against the larynx. This plan of using the hydrogen dioxid proved more efficacious than when used with an atomizer Mercurial inunctions were also used about the neck. The child was still at the breast. Large doses of whiskey were administered at frequent intervals. No lung-complications or kidney-complications were present. Although this case may be said to have had the benefit of a mixed treatment, yet, when we take into consideration the rapidly fatal termination of this form of diphtheria, and remember that in sixty hours from the time of the first injection the child was completely out of all danger, it speaks volumes for the antitoxin-treatment. Physicians who have seen much diphtheria know of the fatality accompanying the laryngeal form, and will appreciate the fact that the patient did well with this treatment.

In consultation with Dr. Edwin Rosenthal we decided to use Behring's Fluid, No. 1, in divided doses, which was contrary to the rules of Dr. Behring's practice; yet the good and prompt results obtained by this method justified us in our procedure. On the evening of our first visit the laryngeal stenosis was so marked and threatening to the child's life that it was a question whether we should use antitoxin or intubate; but having such a powerful remedy at hand, and knowing that the Behring fluid was particularly indicated in the laryngeal form of diphtheria, we felt greatly assured of ultimate success. Sixty hours after the first injection all laryngeal complications were removed. I am indebted to Dr. Edwin Rosenthal for his wise counsel and his kindness in furnishing the antitoxin.

Dr. A. Klein performed the necessary bacteriologic examinations, and reports that the specimens taken from the child showed immense numbers of the diphtheric bacilli, with nests of streptococci and staphylococci. To him, also, I express my thanks for his painstaking labors.

Since writing the foregoing report I have had two more cases of laryngeal diphtheria which have recovered. The first was that of a female child, four years old. The characteristic picture of stenosis of the larynx was very marked thirty-six hours after the use of Behring's Antitoxin No. 2. A marked improvement in the case took place, although later on pneumonia developed, from which, however, the child made complete recovery.

The second case was that of a male child, eighteen months old. Behring's Antitoxin No. 2 was injected. Twenty-four hours later the membranes began to disintegrate and became loosened to such an extent that asphyxia was imminent. Intubation was practised, with immediate relief. Twenty-one hours later the tube was coughed away, and from then on the child has made an uninterrupted recovery. In the last two cases no other treatment was used.

A CASE RESEMBLING MULTIPLE SCLEROSIS FOLLOWING AN INJURY TO THE SKULL IN WHICH THERE WAS FRACTURE WITH MARKED DEPRESSION.

By HAROLD N. MOYER, M.D.,
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The following case presents a rather anomalous picture, and one that hitherto in my experience has not occurred. S. C., a tailor, forty-five years of age, a Bohemian, with a negative family history, stated that his previous health-history has been good, and he denies venereal infection. Seventeen months ago he received a severe injury to the head, which rendered him unconscious for half an hour. He was five weeks in the hospital, and at the end of that time he was so far recovered that he made an effort to resume his occupation, but he had to give it up, owing to a rapidly increasing tremor of the right hand. Of late this has become much more marked, and with it has developed a weakness of the entire right side. There has been some pain in the right arm and through the chest. The patient calls this rheumatism, and it is for that which he seeks relief.

On the left side of the head, extending nearly to the middle line just in front of a vertical line drawn through the external auditory meatus, is an irregular depression in the skull, about one-and-one-half inches in diameter, and of a depth of from one-half to three-fourths of an inch. There is a marked tremor in the right hand, at first fine, then becoming coarse, which is aggravated by grasping objects or attempting to make voluntary movements. As a rule, when the patient is at rest there is no movement of the hand. There is apparently a slight tremor in the right leg and also of the head; but one is not quite sure if these are not transmitted from the arm. The pupils and fields of vision are normal. There is no static ataxia, no nystagmus, and no impairment of speech. Strength in the right arm is diminished one-half as compared with the left. It is impossible to determine accurately the condition of the deep reflexes because of the inability of the patient to relax the muscles. Sensation is quite normal on both the right and left sides. The patient, who is decidedly deficient in intelligence, says that he has had a tremor of the right hand for the past eighteen years, but that it was not sufficient to impair his usefulness in his occupation until after the reception of the injury and fracture of the skull described. I am inclined, from all the circumstances of the case, to think that the patient before the injury might have been slightly neurasthenic, and that this accounted for the tremor of which he speaks. Certainly since the accident he has been unable to follow his occupation.

The development of an intention-tremor after a head-injury has come under my observation only once, and in that case it was not associated with skull-fracture. It is certainly interesting to speculate as to what might have been the changes in the brain and membranes that could have given rise to the particular symptoms that we have in this case. It is also unfortunate that the want of intelligence on the part of the patient renders the clinical history somewhat obscure, and also that the condition of the deep reflexes could not be accurately determined. To my mind the most interesting feature of the case is the development of the tremor shortly after the fracture of the skull, which seemed to initiate a degenerative process closely allied in its clinical manifestations to the ordinary form of disseminated sclerosis. The fracture and depression of the skull are too far forward to bring them in direct relation with the motor area of the cortex, especially that which supplies the right arm, where the tremor first developed. There is nothing to militate against the view of an extension from the original point of a meningeal inflammation which would involve the entire motor region on the left side of the brain. In these cases, however, we should rather look for paralysis and contracture, such as follow the ordinary forms of pachymeningitis. The tremor and subsequent paralysis speak rather for a degeneration of the nerve-cells or some interruption in the conductivity of the fibers leading from the motor region.

A post-mortem examination alone would settle the exact nature of the pathologic changes underlying this case. The rarity of the clinical picture must be my excuse for presenting a somewhat fragmentary observation.

NOTES UPON A CASE OF PERFORATION OF THE UTERUS DURING CURETTAGE.

BY J. W. HICKMAN, M.D.,
OF TACOMA, WASHINGTON.

A SHORT time ago, prior to repairing a lacerated cervix, assisted by Dr. Yocom, I performed preliminary curetting, as is my custom in most cases of the kind. After scraping the endometrium with a dull curet, I introduced a sharp curet, and went over the surface again rather lightly. Then I inserted the uterine douche-tube, and in pushing it up with but a trifle of force, merely enough to be sure I was reaching every part of the fundus, it slipped through into the peritoneal cavity and was withdrawn rather quickly. At the time I was using a 1 per-cent. solution of creolin in sterilized water, and my judgment is that perhaps half an ounce, or rather less, of the fluid had time to escape into the belly. After my tube slipped up fully two inches farther than what seemed to me to be the fundus I introduced a uterine sound to be absolutely sure that I had perforated the uterine wall. I was then abundantly satisfied of what I had done. I did not irrigate the uterine cavity again, but immediately proceeded with the repair of the cervix. Upon paring away the desired amount of tissue the hemorrhage was extraordinarily profuse, and I was obliged on this account to insert the sutures upon one side before preparing the other. The cervix was very soft, so soft, indeed, that the needle passed through as easily as it would through skin and muscle.

I have curetted perhaps several hundred times, and I have rarely done a curettage more lightly; indeed I did most of the work with a dull curet. Another point is, that I did not perforate with the curet, but with the tube of the irrigator. I was afterward comforted by the fact that I had prepared my instruments and hands with scrupulous care, and that I had so far as is possible rendered the vagina aseptic. In spite of all this, I must acknowledge I suffered considerable mental shock during the remaining part of the operation. The patient recovered without an unpleasant symptom of any note. There was no acceleration of pulse or rise of temperature; simply a moderate amount of soreness over the right side of the abdomen over the seat of perforation. Even this subsided within forty-eight hours. This uterus was no doubt unusually thin-walled, likely thinner at some points than others, and, from the condition of the cervix, was certainly abnormally soft. The operation was done three months after the last delivery.

This case illustrates the fact that uterine perforation during curettage is a possible accident. In the future I shall curet no less frequently, no less thoroughly. I shall, however, be more careful than ever, if possible, to be clean, so that if the accident shall be repeated no septic material will be carried into the abdominal cavity.

In reporting this case I am simply carrying out my conviction that not merely successes alone should be reported, but accidents and failures as well. In no other way can we get at the whole truth regarding any line of surgical work.

MEDICAL PROGRESS.

Fibromyomatous Change in the Bladder.—MONRO (*Journal of Pathology and Bacteriology*, vol. iii, No. 1, p. 144) has reported the case of a commercial traveller, twenty-nine years old, who complained of pain and difficulty in micturition. From early life he had had to strain while emptying his bladder. Ten years before coming under observation he had a slight illness, supposed to be due to hepatic disturbance, associated with high color of the urine, which threw down a sediment on standing. Some time later he suffered an injury of the left buttock. For two years there had been complaint of severe pain in the left lumbar region, passing downward to the left groin and testicle, and accompanied by sickness and vomiting. These symptoms would pass off after two or three days, to recur after an interval varying from ten days to a month. In the early part of the illness clotted blood was observed to be present in the urine for two or three days. A hard, tender swelling, dull upon percussion, was found in the lower part of the abdomen. There was also a sense of tumefaction in the left lumbar and iliac regions, and at the upper part of this swelling there was felt a hard, egg-shaped body which could be rolled under the fingers. Another and more superficial body was detected in the same neighborhood. The urine was decomposing and contained much albumin, but no tube-casts or blood-corpuscles were detected. There was no difficulty in passing an instrument into the bladder. An operation was undertaken for the relief of the symptoms, in the course of which it was deemed advisable to excise the bladder. The procedure was a tedious one, as the ureters were so much dilated as to resemble small intestines, and when they were cut across they poured out a huge volume of urine into the wound. The patient died five hours afterward. Upon post-mortem examination the bladder was found to be greatly enlarged and its wall much thickened. The inner surface suggested the appearance of a lobulated kidney, but the lobules were irregular in shape and size, some being very large. The intervening depressions were almost half an inch deep; one situated to the left of the trigone reached to a depth of more than an inch and a half. The surface of the lobules was reddish-brown in color, with a tint of blue, but presented numerous white patches, consisting of easily detachable flakes of epithelium. On microscopic examination the lobules or elevations of the mucous surface were found to consist of unstriped muscle and of connective-tissue elements. There was, moreover, an abundant infiltration of round cells, which at some parts were collected in such numbers as to suggest the commencement of small abscesses. Upon the upper end of the bladder were certain bodies that to the naked eye presented the appearance of convoluted rolls or worms imbedded in fibrous tissue. Microscopically these were found to consist largely of unstriped muscular fibers, together with fibrous tissue and numerous capillaries. The kidneys and ureters were such as are seen in fully developed hydronephrosis. The left kidney was eight and the right six inches in length. On the left side two ureters passed down from the kidney to the bladder. These were at first quite separate, but they became united to one another halfway down, though the lumen of each remained distinct from that of the other throughout its whole length, and the two opened by separate orifices into the bladder. The right ureter was single. All three ureters were much dilated, and measured while lying flat more than an inch and a half across. Connected with the pelvis were two isolated tumors that proved to be typical hard fibromata. They measured about two or three inches in length respectively. Each was ovoid in form, with a distinct capsule, and varied in hardness in different parts.

Successful Operation in Three Cases of Intra-cranial Abscess.—MURRAY (*British Medical Journal*, No. 1775, p. 9) has reported three cases of intra-cranial abscess in which relief was afforded by surgical interference. One of these has been previously reported (see THE MEDICAL NEWS, March 26, 1892, p. 352). During the three-and-a-half years that have elapsed since the operation, the patient has had no convulsions, enjoying good health, and presenting no signs of mental impairment.

The second case occurred in a girl, nine-and-a-half years old, in which symptoms of abscess of the brain developed in the sequence of suppurative inflammation of the middle ear. A disc of bone was removed with a half-inch trephine about three-quarters of an inch directly above the external auditory meatus upon the left side. The dura mater bulged into the opening and did not pulsate. When the dura was divided the brain protruded through the incision. A tenotomy-knife was then passed into the brain for about half an inch, when it entered an abscess-cavity in the temporo-sphenoidal lobe, and pus at once escaped. On further dilating the opening with a pair of sinus-forceps the pus was forcibly ejected. A drainage-tube was inserted, and the abscess-cavity thoroughly cleansed by syringing with warm boric-acid solution. The flap was sutured, and the drainage-tube brought to the surface through an opening made in the middle flap. Three ounces of pus were collected and fully half an ounce was lost. The immediate effect of the operation was very marked. The pulse, which had been 48, rose to 72, and the respiration, which had been 8, rose to 28. Two weeks later the mastoid antrum was opened and unhealthy granulation-tissue removed. During a year following the operation the child was perfectly well.

The third case occurred in a boy, eleven years old, who had had a discharge from the right ear for three weeks, with headache, vomiting, elevation of temperature, and double optic neuritis. An incision over the mastoid process exposed a subperiosteal abscess. In the failure of improvement the mastoid antrum was shortly afterward opened, and offensive granulation-tissue removed. An extra-dural abscess was found in the lateral sinus, from which about a dram of thick, offensive pus was evacuated. The sinus, covered with granulation-tissue, was collapsed and appeared to be thrombosed, and was not opened. Relief still did not ensue. It was now decided to explore the cerebellum from the seat of previous operation. On incising the dura the brain protruded, and by passing a director into the cerebellum forward and inward an abscess was opened, and from four to six drams of sweet pus escaped. The cavity was well washed out through a drainage-tube. which was brought to the surface through an opening made in the middle of the flap. The pulse rose from 20 to 100 beats per minute, and the temperature from 97° to 99.6°. Recovery was thereafter uninterrupted.

Post-neuritic Atrophy with Peculiar Iris-Reaction.—At the Eighth International Ophthalmological Congress recently held at Edinburgh GOULD reported the case of a girl, twelve years old, who had had some obscure spinal and cerebral disease and presented complete blindness, stabile mydriasis, and most intense neuro-retinitis, both papillæ being enormously swollen, the retinal vessels congested and tortuous, and often hidden by the inflamed retina and by multiple scattered hemorrhages. Six months later the neuro-retinitis had quieted down, and typical optic atrophy was pronounced, though vestiges of inflammation remained. Perception of light was absent. After the lapse of a further six months there was absolute optic atrophy of the typical white variety and stabile mydriasis, so far as related to the stimulus of artificial light, and complete blindness. The most brilliant and concentrated light thrown suddenly or continuously on the pupil failed to elicit iris-reaction or perception-response. By seating the child before an open window, however, the street in front being illumined by sunlight or diffused daylight, the pupils were found within half a minute or more to be of normal size. The parents had also noticed that when the child played out of doors the pupils were of the size usual in other people. The motion of the contraction was too slow for observation—that is, one could not positively say that the myotic movement was taking place by watching the pupils attentively. In the same way, the widening, when the patient's face was turned away from the window and directed toward a moderately lighted room, was perhaps more rapid, but still too slow for the detection of its progression.

THERAPEUTIC NOTES.

The Treatment of Empyema in Children.—At a recent meeting of the Medical Society of London CAUTLEY (*Lancet*, No. 3727, p. 285) reported the results of an analysis of a series of eighty-four cases of empyema in children with a mortality of 16.6 per cent. Of twelve cases treated by aspiration only one died, one ruptured externally, and one discharged through the lung. Of thirty-five treated by incision and drainage seven died, while of thirty-three treated by resection and drainage six died. Five out of six cases under two years of age treated by resection died. In the large proportion of the fatal cases death was not due to anything connected with the wound. While it was admitted to be possible for small effusions to be absorbed, it was most emphatically asserted that in cases in which pus was present the only sound treatment was its evacuation. Aspiration sometimes proved useful, and might effect a cure in cases in which the pneumococcus was the primary cause. The disadvantage of aspiration was that thick effusions would not pass through the canula, and that it was impossible to remove all of the contents of the cavity, thus leaving behind a focus of irritation, and that pus rapidly reaccumulated afterward. Moreover, there were certain dangers if the operation was performed too rapidly. On the other hand, aspiration is useful in cases of urgency, in those in which the fluid is thin and sero-purulent, and in cases of double empyema. The advantages of resection are better drainage and facility for exploring the boundaries of the cavity, and for breaking down adhesions. There is also less danger of hemorrhage, and the chances of recovery are better, while recovery is more rapid. The disadvantages of resection are that it is more severe, and, judging from the mortality, ought never to be employed in children under two years of age, and there seems, also, to be greater liability to pyemia and deformity of the chest. It ought, therefore, only to be had recourse to in cases in which the tube cannot be inserted without it, and when drainage is imperfect or for the cure of an old sinus. The tube should be short, and only left in place for a short time. Empyemata do not heal by granulation from the bottom, but by expansion of the lung, ascent of the diaphragm, and contraction of the chest-wall. The tube should always be removed as soon as the discharge becomes more serous and scanty. If left in longer, it becomes a source of irritation.

Treatment of Chorea Minor With Static Electricity.—BROWER (*North American Practitioner*, vol. vii, No. 2, p. 61) has obtained satisfactory results in the treatment of eighty-eight cases of chorea minor with static electricity in conjunction with such other medication as seemed indicated in each particular case. The patient is placed upon an insulated stool, usually connected with the positive pole, and over his head is suspended a coronet with sharp points connected with the other pole. Insulation with a direct current is thus continued for about ten minutes. The patient is then subjected for about five minutes to the static breeze, using for this purpose the induced current. After the treatment is completed the patient is advised to sit quietly for about ten minutes. If possible, the treatment is repeated every day for the first week, then three times during the second week, and afterward twice a week until recovery ensues.

A machine having not less than four plates of twenty-six or twenty-eight inches in diameter is necessary.

The cases were, besides, placed under the best possible hygienic conditions. When necessary, and this was the rule, school was stopped, an hour of rest required in a darkened room at mid-day, the diet carefully regulated, and elimination by the bowels, skin, and kidneys maintained at a proper standard. Arsenic in some form and in varying amounts was administered to all, and in the most rebellious cases was pushed to its physiologic limit. Iron was given when the hemoglobin was found to be below the normal, Blaud's mass being preferred. In females with delayed puberty cimicifuga was prescribed. When there was a rheumatic history sodium salicylate or salophen was made a part of the treatment. If sleep was insufficient, sodium bromid was administered at bedtime, with or without chloral, as seemed to be necessary. The acute cases—that is, those in which the symptoms had continued for less than a month, yielded to treatment in four weeks; in the remainder the average duration was between twelve and eighteen weeks.

Ethyl Bromid as an Anesthetic in Oto-laryngologic Practice.—In a paper read before the Louisiana State Medical Society DE ROALDES had a commendatory word to say for the employment of ethyl bromid as an anesthetic in oto-laryngologic practice, particularly among children. He had successfully employed the agent for this purpose in 150 cases in the course of two years. In effecting anesthesia the agent is poured in large quantity (from one dram to two-and-a-half drams) upon an Esmarch mask, which is closely applied over the nose and mouth with a view to excluding the air. Narcosis is induced in the course of from thirty seconds to two or three minutes, and is sufficiently prolonged to permit of the performance of many short operations. Should sensibility return before the operation is completed, a few more inhalations of the anesthetic may be permitted. The advantages claimed for ethyl bromid are its rapidity of action; the short period of excitement attending its use; the induction at times of complete analgesia, with comparative integrity of the mental faculties; the rapidity with which the nacrotic effects pass off; the uninviting character of the vapor; the relative absence of unpleasant after-effects; the absence of any undesirable influence upon pulse and respiration; its portability as compared with nitrous-oxid gas.

Sodium Salicylate for Exophthalmic Goiter.—CHIBRET (*Revue Générale d'Ophthalmologie*, 1895, No. 1, p. 1) has employed sodium salicylate in the treatment of four cases of exophthalmic goiter with satisfactory results. He administered seventy-five grains in four equal parts, freely diluted with water, in the course of the twenty-four hours.

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THE SURGERY OF THE PERICARDIUM.

MODERN antisepsis has contributed largely to the establishment of well-defined surgical principles, deviation from which is only exceptionally necessary, and then only under exceptional conditions.

We have learned that certain definite lesions and morbid states, whether situated on the surface of the body or within any of its cavities, require equally certain and definite operative measures for their relief. Thus there is but one remedy for hemorrhage (ligation), but one for purulent accumulations (evacuation), but one for malignant neoplasms (excision), but one for aneurysm (occlusion), though there may be more than one mode of applying the remedy.

These remarks are prompted by the report of a series of successful operations upon the pericardium at the hands of different operators, and only recently[1] we took occasion to comment upon a case in which the performance of cardicentesis was followed by recovery. The possibility of successful surgical intervention for the relief of wounds of the heart has been suggested,[2] and as a matter of fact a case is on record[1] in which such relief was afforded in a case of incised wound of the heart.

The recent cases to which we have referred include one of suture of an incised pericardium, one of purulent pericarditis with repeated puncture followed by free incision, and one of repeated paracentesis pericardii. The first case is reported by DALTON,[2] and occurred in a man, twenty-two years old, who received a stab in the left breast, half an inch long and an inch-and-a-half above the left nipple, with little hemorrhage. There were faintness and nausea, but no abnormal physical signs. The wound was cleansed and a dressing of antiseptic gauze applied. In a short time the temperature began to rise, the pulse became accelerated, and the respiration to increase in frequency. Dulness was now manifest upon the entire left side of the chest, and there was complaint of considerable pain. Upon the removal of the dressing applied, blood and air gushed from the wound with each respiration. An incision, eight inches long, was made over and parallel to the fourth rib, six inches of which were resected. A bleeding intercostal artery was found and tied. The pleural cavity was filled with clotted and fluid blood, which was removed by turning the patient upon his left side and using a long pair of forceps armed with a sponge. When the patient was placed upon his back and the margins of the wound separated by strong retractors, a wound of the pericardium, two inches in length, was revealed. At the inner angle of the wound the pericardium was penetrated to the extent of half an inch; the remainder of the wound failed to penetrate the pericardial cavity. By means of two pairs of long forceps and with the aid of a long needle-holder armed with a sharply curved needle and catgut, the pericardial wound was with great difficulty closed by a continuous suture. The pleural cavity was thoroughly irrigated with hot sterilized water, the surgical wound closed and covered by an antiseptic dressing, a cotton bandage and a crinoline bandage, without drainage. The pericardial sac contained only the usual amount of fluid. The patient made an uninterrupted and rapid recovery.

The second case is reported by EISELSBERG,[3] and occurred in a lad, seventeen years old, who received a wound in the pericardium, penetrating perhaps an inch. There was little bleeding, and consciousness was preserved. The wound healed without complication, and the patient was soon able to resume his work. In the course of a month, however, his health began to fail. He tired readily, appeared feverish, and suffered with dyspnea. In the course of two months more the feet became swollen, and the boy sought professional advice. He presented dyspnea, cyanosis of the lips, a frequent and arhythmic pulse, and edema of the lower extremities. The remains of the former wound were visible at the level of and two-fingers' breadth external to the left nipple. On percussion a triangular area of dulness was made out, with its right border corresponding to the right sternal margin, the left beginning at the left sternal margin at the level of the second rib and passing obliquely downward to a point about two-fingers' breadth external to the left nipple. The pulmonary percussion-note was resonant, the dulness upon the right side posteriorly beginning a little higher than upon the left. The breath-sounds were normal, except for occasional mucous râles. The heart-sounds were inaudible; nor could a friction-sound be detected. The abdomen was somewhat distended. The liver was distinctly enlarged and hard. The urine contained excessive urates, but no alubmin. There were moderate elevation of the evening temperature and considerable cough.

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[1] THE MEDICAL NEWS, January 12, 1895, p. 54.

[2] Church: THE MEDICAL NEWS, October 27, 1894, p. 464.

[1] THE MEDICAL NEWS, March 18, 1893, p. 300.

[2] Annals of Surgery, vol. xxi, No. 2, p. 147.

[3] Wiener klinische Wochenschrift, 1895, No. 2, p. 21.

It was recognized that an accumulation of fluid was present in the pericardium, and for its evacuation a trocar was introduced just to the left of the sternum in the fifth interspace, giving exit to a quart of thin, purulent fluid. Distinct relief was temporarily afforded, but in the course of two weeks the puncture had to be repeated, this time evacuating slightly less fluid, and after the lapse of another week a third puncture was necessary, evacuating rather more than a quart of purulent matter. The improvement, however, was again but temporary, and resection of the fourth costal cartilage, with incision of the pericardium, evacuation of its contents and irrigation with a warm solution of salicylic acid, was practised. To prevent contamination of neighboring parts the margins of the incision into the pericardium were attached to the muscular structures, and two drainage-tubes were introduced. The patient was much collapsed after the operation, but responded readily to active stimulation. For a week the dressings were changed daily, considerable fibrinous pus being discharged. On the second day injections of iodoform-glycerin were made through the drainage-tubes, with excellent results. On the seventeenth day the tubes, which had been gradually shortened, were removed, and at the end of four weeks more the wound was firmly closed. Improvement in the general condition set in after the operation, and continued to ultimate recovery. Examination of the pus from the pericardium disclosed the presence of an organism resembling the bacterium coli communi in pure culture, but not capable of liquefying gelatin or of coagulating milk or of inducing the nitroso-indol reaction.

The third case is detailed by KIDD,[1] and occurred in a man thirty-four years old, who presented extreme dyspnea, both inspiratory and expiratory, with pallor of face, cold sweating, and anxious expression. The pulse-tension was high, and the left ventricle was hypertrophied and dilated. There was edema of the bases of the lungs, and a small pleural effusion on the right side. The urine contained a small quantity of albumin. Under treatment with morphin, trinitrin, and amyl nitrite improvement followed. After a time, however, the symptoms again became troublesome and paracentesis of the right pleura was performed, with the evacuation of three ounces of rose-colored fluid. Temporary improvement followed, but the symptoms again returned, and paracentesis had to be repeated, four ounces of fluid being on this occasion withdrawn. Several days after this operation, which afforded great relief, the patient complained of severe pain in the left side, and was much distressed. A double pericardial friction-sound was heard over the whole precordia. The application of six leeches to the cardiac region was followed by speedy relief. After the lapse of several days the patient was again suddenly seized with dyspnea and cardiac failure. It now became evident that the pericardial cavity contained a considerable effusion, and paracentesis was performed. Five ounces of blood-stained serum were removed, with great relief to the patient and improvement in the symptoms. The symptoms later again becoming alarming, paracentesis was repeated, twenty-eight ounces of fluid being removed. The patient was comparatively comfortable for two months, when his condition changed for the worse. Paracentesis was again attempted, but no fluid could be obtained. The patient gradually failed, and death finally took place. On post-mortem examination recent adhesions were found on both sides of the chest; the left pleura was adherent to the pericardium. The pericardial sac was entirely obliterated by adhesions, firm at the base, but very soft toward the apex and the lower part of the right ventricle. The pericardium was studded with numerous small hemorrhages, old and recent. The heart was greatly enlarged, the left ventricle being principally affected. The muscular tissue was rather soft. The cavity was moderately dilated. The valves were normal. The kidneys were much contracted. The capsules were thickened, but stripped easily, leaving a granular surface.

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[1] Lancet, No. 3737, p. 275.

The results obtained in these cases ought to aid the judgment of the surgeon and strengthen his hand under conditions in which a policy of expectancy or non-interference is most likely, if not certain, to be attended with disastrous results.

ARTIFICIAL ANKYLOSIS FOR PARALYTIC DEFORMITIES.

There is no class of cripples so helpless, and for whom so little relief has been offered, as for those afflicted with deformities resulting from severe infantile paralysis. The quotation from *Timon, of Athens*, in Shakespeare: "'Tis not enough to help the feeble up, but to support him after," applies with greater force to this class of the deformed, as the instrumental relief afforded has to be maintained throughout life. In most afflictions the apparatus may be discarded at an earlier or more remote period, but not so in these paralytic cases; final dissolution alone separates apparatus from the afflicted, and the annoyance and expense connected with the purely mechanical treatment are readily to be appreciated. Any operative measure that offers a possibility of enabling such patients to dispense with mechanical appliances will be hailed with joy by the sufferers, and should be carefully considered by the profession until it has proved itself an aid to the sufferer, until it is to be regarded as entirely adequate, or, perchance, until it has advanced our surgical means to a more perfect method, of which this is but the inauguration.

The brilliant results achieved by operative measures in severe paralytic cases by De Forest Willard (Tenth International Congress, 1890, *Transactions of the American Orthopedic Association*, 1891) in the otherwise hopelessly deformed have stimulated others to a more careful study of the subject and a more earnest effort to assist these otherwise incurable cases. The labors of Gibney, Bradford, Young, McCurdy, and others have all demonstrated the importance of surgical measures in restoring to some degree of usefulness persons who would otherwise be doomed to spend their lives upon the floor or the bed.

In recent numbers of the *Provincial Medical Journal*, December, 1894, and January, 1895, Robert Jones, F.R.C.S.E., has proposed and has reported success in producing artificial ankylosis of the knee-joints and ankle-joints in paralytic flail joints. His purpose was to try to transform the flail limb into a member approximating as closely as possible to the splint which he wished to discard. The procedure consists in ankylosing the knee and partially ankylosing the ankle-joint. This has been performed in twenty-six cases, fifteen of which are published. The operation consists in opening the joint, and, with a scalpel or sharp gouge, peeling the superficial area of cartilage off the whole articulation in the case of the ankle, and gouging the bone in the case of the knee, keeping the joint completely at rest for some weeks subsequently, and for a long period fitting the limb with a simple apparatus which will enable the patient to walk without throwing a strain upon the newly fixed joints.

In operating upon the knee an incision is made across the front of the joint, covering fully half its circumference, and curved so as to pass the lower end of the patella. The flap is turned up and all the vessels ligated. The crucial ligaments are allowed to remain intact. Deep and superficial sutures are used to close the wound, no drainage-tube is employed, and an antiseptic dressing encloses the wound.

In the ankle-joint in old cases of paralytic equinovarus the joint is opened by an incision immediately in front of the external malleolus, following the line of the ankle-joint. Several grooved portions of the articulating cartilage are removed, including fragments of the articulating surfaces of the tibia and fibula. In some cases the astragalus is more easily reached from behind. The incision is made along the external border of the tendo Achillis.

No mishap attended the operation in any of the series; union has occurred by first intention, attended by little or no pain. Two separate splints are employed to fix the knee and ankle. After the operation it is necessary in all cases to prolong for a considerable period the use of apparatus, as it takes a considerable time for the joints to become so securely fixed as to bear the bodily weight and the ankle-lever strain.

The production of partial ankylosis in paralytic cases is a new suggestion, and, judging from the reports, an excellent one in selected cases. The number of cases in which such operation will be necessary will be comparatively small, especially in this country. Most American patients prefer apparatus to operation, and especially since the sudden changes of an unstable new country do not preclude the possibility of the poor of to-day becoming rich in the near future. The operation of artificial ankylosis is an operation for the poorer classes. In this class of cases excision of the knee-joint and ankle-joint has been seriously considered by AP MORGAN VANCE and others, and excision in order to secure a stiff joint, or arthrodesis, as it is styled by ALBERT, has been performed with excellent results by WINIWARTER, LESSER, J. WOLFF, RYDYGIER, and ALBERT. The operation of artificial ankylosis would, in those cases requiring such an operation, be the preferable procedure.

EDITORIAL COMMENTS.

The Homeopathic Department of the University of Michigan.—An interesting state of affairs exists at the University of Michigan. It appears that in 1875 the Legislature voted the establishment of a chair of homeopathic materia medica and therapeutics, and one of the practice of medicine, the students who listened to these professors attending also lectures on the remaining subjects by the regular professors, and being duly examined by these. As time went on the clinical professors in the Department of Medicine and Surgery objected to teaching "homeopathic" students, and additional "homeopathic" professors were added, to the number of five, the "homeopathic" students continuing to receive instruction in chemistry, physiology, bacteriology, hygiene, physiologic chemistry, physics, pathology, histology, etc., with the students of the Department of Medicine and Surgery. In time a hospital was built for the University, and subsequently also a homeopathic hospital. During the twenty years from 1875 to 1895 the homeopathic department has graduated 309 students at a net cost of $154,962, about $500 per capita. There are at present but seventeen students in the department, and of these twelve receive all of the instruction, with the exception of lectures in materia medica, from the regular faculty. The cost per student in the department of regular medicine equals $169. To reduce the double cost of two faculties, each with its own hospital, and the attendant loss, it has been suggested that the homeopathic school, as a department, be abolished, and that a professor of homeopathic materia medica and therapeutics be appointed. The dean of the homeopathic department proposes amalgamation. He would allow each "school" a professor of materia medica and one of the theory and practice of medicine, and would divide the operative chairs equally between them (thus surgery and obstetrics should go to one school, and gynecology and ophthalmology to the other); the rest of the chairs should be single, and some of the "useless" chairs should be abolished. We doubt if any such amalgamation is possible, although we see no objection to the incorporation of a course of lectures on homeopathy in the regular curriculum. There could be no better way of showing the good, if there be any, as well as the fallacies, the inadequacies, and the deficiencies of so-called homeopathic therapeutics. Such a plan is pursued in Germany, where homeopathy as an organized body does not exist. It is the privilege of the true physician to use any legitimate remedy or agency, whatever its source, that will relieve suffering or cure disease. The practice of the sectarian is limited to the applicability of his dogma.

Anti-Choleraic Inoculation in India.—There still appears to be some uncertainty as to the real utility of inoculations in the prophylaxis of cholera, although such evidence as is attainable rather supports the usefulness of the procedure. In the discussion of the subject at the recent Indian Medical Congress HAFFKINE (*British Medical Journal*, No. 1778, p. 219) related that the total number of persons thus treated in India is 32,166. Two-thirds of this number were subsequently inoculated with the second vaccine from five to twelve months after the first. During 1894, 3478 persons in Calcutta were inoculated. In thirteen houses containing 181 people cholera appeared from two to one-hundred-and-eighty days after the inoculation had been made. The number of persons inoculated in these houses was eighty-five, and among them one case which was fatal occurred, a percentage of 1.18. Among the ninety-six non-inoculated persons there were fifteen cases of cholera and eleven deaths, or 15.63 per cent. of cases and 11.63 per cent. of deaths respectively. In August, 1894, an epidemic of cholera broke out among 872 soldiers in Cawnpore. Seventy-five of these had been inoculated thirteen months previously. Among the whole number nineteen cases occurred, with thirteen deaths, all among the non-inoculated. In Lucknow there were among 640 non-inoculated persons 120 cases (18.75 per cent.), with seventy-nine deaths (12.34 per cent.), while among the 133 inoculated there were eighteen cases (13.53 per cent.), with thirteen deaths (9.77 per cent.). In no instance were the injections followed by unpleasant results. Observations were made of 2235 persons in Calcutta, Cawnpore, and Lucknow. Of this number, 500 were inoculated, and 1735 not. Among the former there were twenty-one cases of cholera (4.2 per cent.), with nineteen deaths (3.8 per cent.), while among the latter there were 174 cases (10.63 per cent.), with 113 deaths (6.51 per cent.). These results would appear to justify a continued use of the injections and to warrant the hope that we have really acquired a powerful means of mitigating the severity and reducing the mortality of one of the gravest plagues transmitted from antiquity.

The Treatment of Typhoid Fever—through the Newspapers.—Readers of THE MEDICAL NEWS may recall that in the numbers for March 3 and March 17, 1894, we took issue with the methods of Dr. J. E. Woodbridge in advocating, in a paper published in the *Journal of the American Medical Association*, the treatment of typhoid fever by means of whose nature no mention was at first made, but which was, however, given in a paper read four months after the first. Dr. Woodbridge's position was at the time defended and its own course justified by the *Journal*. One or more articles upon the same subject have appeared since our original comment, and quite a warm discussion has waged around the method of treatment. The last word on the subject comes from a lay journal, the *Youngstown Daily Vindicator*, which in its issue of February 4, 1895, devotes a large part of a column under the heading

"CAN BE CURED.
Interesting Paper Presented
By a Prominent
Physician,
Treatment of Typhoid Fever.
Dr. John E. Woodbridge gives
the results of his experience,"

to liberal quotations from "the current number of the *Journal of the American Medical Association*," from "a paper read by Dr. John E. Woodbridge, of this city, on the treatment of typhoid fever, containing reports of many cases of a serious character successfully treated. The paper was read by Dr. Woodbridge at the meeting of the Mississippi Valley Medical Association in Hot Springs."

Several formulæ and other details are given. We have no word of comment, but are deeply moved in admiration of the judgment and discrimination, not to speak of the local pride, of the home newspaper in thus spreading the fame of one of its distinguished fellow-citizens.

The Nostrum-Syndicates, the Law, and the Newspapers.—A bill is pending before the Tennessee Legislature to compel all makers of patent medicines to print the formulas of the remedies, against which the *Chattanooga News* thus protests:

> "We desire to enter here our most emphatic protest against this measure. It means a loss of hundreds of thousands of dollars to the State. No reputable manufacturer would think of giving away his formulas in this manner, so that anyone who chooses could take advantage of the legitimate secrets of his trade. Before they would divulge these secrets they would withdraw entirely from the State.
>
> "The result would be that the druggists, a large part of whose trade lies in patent medicines, would be deprived of a principal source of their income, the railroads would lose immense amounts of freight, and the newspapers would be almost ruined.
>
> "The advertisements of patent and proprietary medicines constitute a very large part of every newspaper's business, and many of the country weeklies would have to suspend publication if it were not for this patronage.
>
> "The day has passed when the best physicians refuse entirely to prescribe these remedies. Most of them find occasion at times to use them in their practice. The really skilful doctor is not injured.
>
> "The people are not imposed on to any large extent. They soon discover what is fraudulent and what is of genuine merit. The bill can help no one but physicians who have not the ability to command practice on their own merits, but who hope by this means to compel patients to call on them."

It is not often that a bribed editor is thus honest and frank. We reproduce the "argument" to illustrate the difficulties that hamper medical progress in our country and that throttle legislation and reform of the outrageous abuses which both the profession and the people endure.

The "Special Edition" with Portrait and "Write-up."—Such, we believe, is the newspaper jargon for expressing a method of uniting journalistic and professional "enterprise." According to an illustration before us as we write, the price of a "write-up" of fifty lines, with "scetch" (sic) and portrait of the doctor, in "the quarter-century anniversary edition of the Indianapolis *News*" is $35.00. We have received during the past year a large number of newspapers from all over the land, containing numerous "scetches" and "write-ups" of all the local physicians, sandwiched between the ditto ditto (as Artemus Ward would say) of the no less enterprising butcher, baker, and candle-stick maker. We suppose that with the advertisements of *cancer-cures* and *Wizard Kings of Pain*, and *Lost Manhood Restored*, these respectable, most respectable, members of the American Medical and many other Associations thus naturally contribute to the support of journalistic and medical ethics. No wonder at the professional opposition to the Code of Ethics! The "write-up," as if out of the kindness of heart, and from local patriotism of the newspaper editor, that is to say, the reading-notice in the editorial columns, costs more than a plain, straightforward "ad." in the other columns. Now the Code of Ethics compels the "hustler" to pay the higher price for the reading-notice. No more effective ground for hatred to the Code could be imagined, and we therefore suppose we shall have a subacute attack of codephobia of especial virulence in Baltimore next May.

Argon is the name finally given the new element or gas discovered in the atmosphere by Lord Rayleigh and Prof. Ramsey. The word is derived from *ἀγ* priv., and *ἔργον* work, and is thus allied to the old medical words *anergia* and *anergic*, and is given to the substance because of its remarkable inertness. Argon is soluble in water to the extent of four in one-hundred volumes. Its density is 20, its atomic and molecular weight 40. It condenses to a colorless liquid at —128.6° C., and under a pressure of 38 atmospheres and at a lower temperature it freezes to a crystalline mass resembling ice. Its freezing point is —189.6° C., its boiling point —187°. Professor Crookes concludes that perhaps two new elements are contained in the substance, as it yields two distinct spectra. There are many physiologic and medical questions suggested by its presence even in such small proportions as 1 : 125 or 1 : 200 in our atmosphere, but so far these exist only as queries half-formed and wholly unsolved.

Medicine or Manslaughter?—The lay-public is justly exercised over the report, purporting to come through the engineer (an English officer) upon the Chinese vessel the *Yang Wai*, that after an engagement with a Japanese man-of-war the hopelessly wounded were at once put to death by the surgeons in charge, by means of prussic acid. Were the surgeons Englishmen or Americans, and is the report true? Can any one send us reliable information?

SOCIETY PROCEEDINGS.

MEDICAL SOCIETY OF GREIFSWALD.

Meeting held November 3, 1894.

NOTE.—The account of this meeting is published at this late day as the discussion seems to emphasize in a greater degree than has been done elsewhere the importance and the necessity of joining systematic local measures with the specific treatment.

MOSLER reported that from October 1, 1893, to October 1, 1894, 351 cases of diphtheria had been treated at the clinic at Greifswald (287 children and 64 adults). Among these there had been only 40 deaths (39 children and 1 adult). At the medical clinic held at the University Hospital 313 were treated, with 46 deaths (15.5 per cent.). Of these last a number were sent to the hospital on account of the severity of the disease, and among them many arrived moribund. It was not until August, 1894, and when the epidemic was disappearing, that Behring's treatment was employed. Thirty cases were treated by this method, with remarkably good results.

It was said that expectations for the serum-therapy must not be too much exaggerated. It is not a panacea for all cases of diphtheria. Its action is uncertain in those cases in which the diphtheria-germs are associated with other pathogenic microörganisms, such as the streptococcus. However, in these mixed cases the suppression of the effects of the diphtheria-poison will perhaps have a good effect. It remains for the physician to determine what remedies shall be used in connection with the serum-therapy in these cases of mixed infection.

BÖRGER reported 30 submitted to the serum-therapy, of which only two had died. Five had tracheotomy performed, and of these one had died. The reports for the same months of the preceding year, however, gave equally good results, the average mortality being 15.5 per cent., and this, of course, was previous to the introduction of the serum-therapy. It shows the skill with which cases of diphtheria were treated in this clinic.

LOEFFLER stated that the bacillus of diphtheria does not usually penetrate the organism. Since it only develops locally and produces its poison, it would seem to be advantageous to destroy the colonies where they exist. The local treatment of diphtheria is, therefore, logical.

In cases of sore-throat caused by other pathogenic microörganisms than the diphtheria-bacillus the serum has no effect. In cases in which the diphtheria-bacillus is associated with other microörganisms local treatment is equally indicated. Then, too, the local treatment has the advantage of preventing the spread of the pathogenic agents.

LOEFFLER said he had found a large number of antiseptics capable of destroying cultures of the diphtheria-bacillus in twenty seconds, but in most cases it is not possible to submit the patient to the action of these remedies during so long a period. He had, therefore, attempted to find an agent of still more rapid action. After many trials he had found that a mixture of 60 parts of alcohol, 36 of toluol, and 4 of solution of ferric chlorid destroyed these cultures in five seconds. Experiments made on animals with this mixture yielded excellent results. During the last epidemic many physicians had applied this remedy, and among 70 cases not a single death resulted. At the clinic of Mosler 36 cases were treated, with 5 deaths, but these cases were too far advanced to be benefitted by local treatment.

When the treatment is properly applied in cases of diphtheria in the first twenty-four hours the temperature falls one or two degrees, the pulse becomes slower, and the general condition is improved as much as when serum-therapy is employed. When the treatment is begun early paralysis never follows.

When the remedy is energetically applied it causes a burning pain. To prevent this, Strübing has advised the addition of menthol. The following mixture is less painful:

Menthol	10 parts.
Toluol	36 "
Alcohol	60 "
Ferric chlorid	4 "

Hydrogen sulphid is produced in the pharynx in putrefactive processes, and this precipitates the ferric chlorid in the form of iron sulphid, lessening the effect of the mixture. In these cases it is best to substitute two or three c.c. of creolin or metacresol for the ferric chlorid. These mixtures have a very energetic action on all other pathogenic microörganisms, as well as on the diphtheria-bacillus. All sore-throats may be treated by them with good results.

STRÜBING said that in one epidemic one-fourth of the cases were not true diphtheria, but pseudo-membranous sore-throat, produced by other organisms, and particularly by the streptococcus. It is very interesting to note that under the same conditions in which true diphtheria develops we find also an extraordinary number of "diphtheroid" sore-throats due to other microörganisms. These cases, usually of a very benign character, are sometimes exceedingly malignant. If the microörganisms present penetrate into the tissues and bloodvessels the streptococcus multiplies there, and the patient succumbs similarly to cases of streptococcous septicemia. In certain conditions these "diphtheroid" sore-throats become putrid, as in true diphtheria. The submucous tissues become infected and cause phlegmons of the neck. Unfortunately serum-therapy is powerless against the streptococcus, and the physician must resort to local treatment.

If a case of diphtheria is seen on the first or second day, it is not necessary to employ the anti-diphtheric serum, for the "Loeffler mixture" is sufficient to check the course of the disease. If the disease is more advanced, the serum should be employed, but even the serum may be powerless in the presence of a mixed infection; so the local treatment should also be employed. The "Loeffler mixture" is the most efficient local application of any that have been used up to the present time. As its use, however, is attended with pain, so soon as the disease is controlled and the temperature returns to normal, it is better to substitute other remedies, especially mercuric chlorid. It must not be thought that the "Loeffler mixture" is free from objections. Its use is always attended with more or less pain, and, if applied too strong, it injures the mucous membrane.

It is impossible to give a general formula for repeated local treatment in all cases. One must be guided by the extent and duration of the disease. If the case is a very severe one, the mixture should be applied on cotton tampons, eight or ten applications being made at one sitting, and the sittings repeated every three or four hours till the fever disappears.

A serious obstacle to the local treatment is the extension of the lesions to the nasal passages or the respiratory passages. The applications cannot then be employed, or, if they could, the mucous membrane of the larynx and nose will not tolerate this powerful remedy.

Fenderich reported 191 cases of diphtheria treated at the surgical clinic at the University from April 1, 1887, to April 1, 1894. This was, of course, before the introduction of serum-therapy. Of the total number 114 (57 per cent.) died; in 153 cases (77 per cent.) tracheotomy was performed, and 100 of these died. In the last year alone tracheotomy had been performed in 96 cases, of which 25 had recovered.

Beumer reported that in one house in which there were five cases of diphtheria, two being fatal, he had treated the sixth child with serum, and it was not affected with diphtheria. Some days later, in an asylum containing 17 children, 3 having contracted diphtheria, the others were vaccinated with serum; and, in spite of the bad sanitary conditions present, none of them developed diphtheria.

As to the production of albuminuria after the injection of the serum, Loeffler states that the excretion of toxins by the kidneys causes a lesion of these organs, which does not manifest itself at once, because the kidneys can bear a certain amount of the poison.

Peiper stated that in a case of true diphtheria treated by injections of serum, albumin did not appear until the end of two weeks, and lasted only four or five days. No casts were found in the urine. Three weeks after the injection the child had an ocular paralysis.

Loeffler said that side by side with the true diphtheria-bacillus which is found in the mouths of patients recovering from diphtheria, the pseudo-diphtheria-bacillus is also found. The latter has little pathologic importance except that it is an attenuated form of the true bacillus. We do not know if the true form which has lost its virulence can be made to regain it. However, in individuals in perfect health the virulent form has been found, and in this way the disease may be disseminated. These virulent bacilli are found in the mouths of persons who have had diphtheria for a variable time after recovery. For this reason the German committee proposed at the Congress at Budapest not to allow children that have had diphtheria to return to school until bacteriologic examinations of their mouths no longer disclosed the presence of diphtheria-bacilli.

Abel reported a series of researches on the immunizing power of the blood-serum of persons recovered from diphtheria. This power has only been proved to exist for six or seven days after recovery. On the other hand, it has been found to exist in some cases for eight or ten days, and in a few cases for some months. This shows that a first attack of the disease does not absolutely prevent a second.

The blood of persons who, according to their statement, have never had diphtheria has also been examined. In most cases it had the power to protect guinea-pigs against diphtheric infection.

Wasserman has already shown that this property of human serum becomes more pronounced with the progress of age.—*Le Bulletin Médical*, December 2, 1894.

CORRESPONDENCE.

SYMPHYSIOTOMY.

A Personal Protest by Dr. Henry J. Garrigues, of New York.

To the Editor of The Medical News,

Sir: In the number of The Medical News issued on January 12th Dr. W. Winterberg, of San Francisco, Cal., in an article on symphysiotomy, writes: "The upper limit is placed at 88 mm. by the majority of operators, while Dr. Garrigues advocates 95 mm. in a flat, and 11 cm. in a generally contracted pelvis, on the ground that the latter offers the same resistance as a flat pelvis with a conjugate 13.5 mm. (0.5 inch) shorter.

"This proposition of Dr. Garrigues is unintelligible. It certainly is paradoxical to talk of a generally contracted pelvis with a conjugata vera of 11 c.m. The normal length of the true conjugate is 11 c.m., therefore, with one diameter perfectly normal, a *general* contraction cannot be said to exist in such a pelvis."

Before designating my sayings as *unintelligible* and *paradoxical*, Dr. Winterberg should have ascertained what I said. Three times I have addressed the profession on the subject of symphysiotomy, namely, in the *American Journal of the Medical Sciences*, March and April, 1893; the *American Journal of Obstetrics*, November, 1893; and the *Medical Record*, November 10, 1894. In all these publications I place the upper limit for symphysiotomy at 3½ inches, 9 cm., in the flat pelvis, and at 4 inches, 10 cm., in the generally contracted.

I do not know with what right Dr. Winterberg adds 5 mm. to the first measure and 10 to the last.

Morisani places the upper limit at 88 mm.; 3½ inches are 89 mm.; and since nobody can measure either 1 or 2 mm. in a pelvic diameter of a living person, there is practically no difference between the upper limits in the flat pelvis as stated by me and the majority of operators, and it is better to have round, approximately correct figures, such as 3½ inches and 9 c.m.

As to the normal antero-posterior diameter of the superior strait, it is 11, or, according to some authorities, even 11.5 cm. One of 10 cm. is, therefore, abnormally short, and when at the same time the transverse diameter is too short the pelvis is generally contracted. Just as it is a rule, followed by the best obstetricians in regard to the lower limit for the application of the obstetric forceps, to demand one centimeter more in the length of the antero-posterior diameter of the brim of the *generally* contracted pelvis than of the flat pelvis, I think it proper to make a similar addition to the true conjugate in placing the upper limit for symphysiotomy.

This is of particular importance to us here in New York—and according to Dr. Edward Reynolds (*Transactions American Gynecological Society*, 1892, xvii, p. 124), the same applies to Boston—as the form of narrow pelvis we have to deal with nearly always is the generally contracted pelvis and not the flat, which is the common form in Europe.

To this must be added that the average weight of American children is ⅓ pound heavier than that of French children, more than ⅔ pound heavier than that of German children, and even 1⅙ pounds heavier than that of English children, taking Lusk, Tarnier, Spiegelberg, and Playfair as representative authors for their respective countries.

There seems, therefore, to be good reason for American obstetricians to place the upper limit for symphysiotomy somewhat higher than they do in Europe.

There are other points in Dr. Winterberg's article to which I would take exception, but as I have no inclination to begin a controversy—and this would draw the attention away from the main point—I shall limit myself to this protest against being misquoted and then told my teaching is unintelligible and paradoxical.

Respectfully,
HENRY J. GARRIGUES.

NEWS ITEMS.

Medical Coeducation in Paris.—The medical faculty of the University of Paris opened its doors to women in 1868, but at first only a very few availed themselves of the privileges thus offered. In 1878 the number in attendance was 32; during the next ten years (1878–'88) it increased to 114, and is at present 183, of whom the great majority (167) are Russians. The remainder are Poles, Roumanians, Servians, Greeks, and Scotch, and only one German. Many of them, chiefly Russian, have been through the gymnasium; others have acquired a more or less thorough knowledge of literature, history, the natural sciences, and philology in such secondary schools as were accessible to them. As foreigners, they must all be examined in Latin and Greek before admission, and be able to translate passages from the easier classical writers, Cæsar and Xenophon, at sight, and to analyze them grammatically. The courses of study are pursued conjointly with the young men, and this association, so far from producing a demoralizing effect, tends to elevate and refine both sexes. One lady declares that during an experience of three years in the clinique, the auditory, and the dissecting-room she has never observed that the presence of young ladies occasioned the slightest improper word or act on the part of their male colleagues. Most of the women who practise medicine in Paris are married. "Model wives and happy mothers, they nevertheless find time to devote to their profession." The professors and directors of the hospitals praise the conscientiousness and diligence of the women, and acknowledge them to be, both in general intelligence and in special knowledge, fully equal to the men. The latter also admit the truth of this statement, and assert that they ought to be even superior in these respects, since they are not compelled to waste their time in cafés and cabarets. It is still difficult for some of the older members of the faculty to reconcile themselves to the new state of things.—*New York Evening Post.*

Meetings of Philadelphia Medical Societies:

	Meets.	Next meeting.
Academy of Surgery,	1st Monday of month, Oct.—June.	March 4
College of Physicians,	1st Wednesday of month, Sept.—June.	March 6
Section of Gynecology,	3d Thursday of month, Oct.—June.	March 21
Section of Ophthalmology,	3d Tuesday of month, Sept.—May.	March 19
Section of Orthopedic Surgery,	3d Friday of month, Oct.—April.	March 15
Section of Otology,	1st Tuesday of month, Oct.—May.	March 5
Section of Surgery,	2d Friday of month, Oct.—May.	March 8
County Medical Society,	2d and 4th Wednesdays of month, Sept.—June.	March 3
Neurological Society,	4th Monday of month, Oct.—April.	March 25
Obstetrical Society,	1st Thursday of month, Sept.—June.	March 7
Pathological Society,	2d and 4th Thursdays of month, Sept.—June.	March 14

Appointments at Jefferson Medical College.—Dr. William Thomson, who has been Honorary Professor of Ophthalmology, has been given the full professorship. Dr. Howard Forde Hansell, who has been Chief Clinical Assistant, has been made Clinical Professor of Ophthalmology.

Dr. R. Meade Bolton, Director of the Bacteriological Laboratory at Johns Hopkins University, has been made Chief of the Division of Pathology, Bacteriology, and Disinfection of the Philadelphia Board of Health.

BOOKS AND PAMPHLETS RECEIVED.

U. S. Department of Agriculture. Bureau of Animal Industry, Bulletin No. 7. Investigations Concerning Bovine Tuberculosis, with Special Reference to Diagnosis and Prevention. Conducted under the Direction of D. E. Salmon, M.D., Chief of the Bureau of Animal Industry. Washington: Government Printing Office, 1894.

Hypertrophy of the Pharyngeal or Luschka's Tonsil. By E. Fletcher Ingals, A.M., M.D. Reprinted from the Journal of the American Medical Association, 1894.

Apex-Catarrh. By Howard S. Straight, A.M., M.D. Reprinted from the Medical Record, 1894.

Total Extirpation of the Uterus by a New Method. By Albert H. Tuttle, M D , S.B. Reprinted from the Boston Medical and Surgical Journal, 1894.

The Non-operative Methods of Treating Anal Fissure or Irritable Ulcer of the Rectum. By Lewis H. Adler, Jr., M.D. Reprinted from the Therapeutic Gazette, 1894.

Intraligamentous and Retroperitoneal Tumors of the Uterus and its Adnexa. By William H. Wathen, A.M., M.D. Reprinted from the Transactions of the American Gynecological Society, 1894.

A New Apparatus for Administering Anesthetics in Face and Mouth Operations. By Edmond Souchon, M.D. Reprinted from the Journal of the American Medical Association, 1894.

Transactions of the American Ophthalmological Society. Thirtieth Annual Meeting, Washington, D. C., 1894. Hartford: Published by the Society, 1894.

Report on Typhoid Fever in the District of Columbia, Submitted by the Medical Society of the District of Columbia to the Committee of the District of Columbia of the U. S. House of Representatives, June 14, 1894. Washington: Government Printing Office, 1894.

THE MEDICAL NEWS.

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ORIGINAL ARTICLES.

SURGICAL TUBERCULOSIS.[1]

BY NATHAN JACOBSON, M.D.,
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SURGICAL tuberculosis, I take it, includes such forms of tuberculous disease as may be amenable to surgical treatment. Each year, as these pathologic conditions are better appreciated, the possibilities of surgical help increase.

Tuberculosis appears in various guises: Lupus is skin-tuberculosis; the connective tissue has its tuberculous abscesses; in the nose, mouth, and larynx it is seen as a primary affection, to say nothing of the lungs, where it is most frequently encountered. Tracing its course further along the mucous membranes, we find it invading the alimentary canal, appearing in the genito-urinary tract of both male and female, and awakening peritoneal infection. Again it is seen in the glandular structures, most frequently in the neck. The long and short bones, the joints, the spine are common sites of its occurrence. The special organs are not free. In fact, it would be difficult to suggest a structure in which it has not appeared as a primary disturbance. Diseases formerly called by other names are now recognized as being tuberculous, under which head we might mention scrofula, caries, tumor albus, and hip-joint disease. Even the deeply placed organs, as the kidneys, the Fallopian tubes, and ovaries, do not escape the incursions of the tubercle-bacillus. This enumeration, in itself very incomplete, suggests how inexhaustible must be the subject of the surgical treatment of tuberculosis. I can, therefore, present the disease in but a few phases, and, rather than attempt to consider its many different surgical forms, shall restrict myself to the discussion of the more frequently encountered varieties.

A brief preliminary word before we enter upon our specific task. No one to-day holds to the constitutional origin of tuberculosis. We must regard it as a local infectious disease, awakened by the introduction of the specific germ into tissues whose resistance has been lowered. That tubercle-bacilli can enter through unbroken mucous membranes is not to be questioned. Cornet presented the result of his experiments to the French Surgical Congress in 1889, in which he showed that tuberculous glandular swellings could be produced in guinea-pigs as the result of rubbing tubercle-bacilli into a mucous membrane without lacerating it. At the request of Volkmann, Schuchardt studied so-called scrofulous invasion of the skin and mucosæ presenting nothing unusual microscopically. In an instance of eczema of the forearm the bacilli were found between the scales of the epidermis. These points suggest the manner in which the local forms of tuberculosis originate.

However introduced, whether finding its way to glands through the mucous membrane, by way of the lymphatics, or discharged into the blood-current and locating itself as an embolic plug at a remote part of the body, the infection establishes itself first locally, heaping up its characteristic nodules, involving the surrounding structures, building up large fungous growths or forming caseous masses, ultimately producing local abscesses, or leading to constitutional disturbances. Again, it may awaken in the surrounding tissues reactionary inflammation, and secure thus a spontaneous arrest of the tuberculous process, while the bacilli and their spores, possessing remarkable vitality, may lapse as it were for a time in a state of "innocuous desuetude." Baumgarten discovered in autopsies made upon persons dying of other than tuberculous diseases, that one out of every four had latent tuberculous foci in the lungs. And so elsewhere in the body, the tuberculous areas may become quiescent, and particularly so under conditions favorable to such a result. Thus a tuberculous affection of the lungs or other structures need not necessarily lead in the first instance to death of the individual, nor in the latter to local necrosis.

GLANDULAR TUBERCULOSIS. Not all chronic enlarged glands of the neck are tuberculous. Much the larger percentage, however, of those that show no disposition to diminish, but remain latent or increase in size, and especially if they exhibit a tendency to suppurate, are tuberculous. The general physician has been accustomed to treat this latter condition with poultices. When the glands have broken down and pus has reached the surface he makes an incision and gives vent to the purulent collection. Nature has to do the rest. No more unsurgical course could be pursued.

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[1] Read before the Onondaga County Medical Society, December 18, 1894, being part of the discussion on "Tuberculosis."

The tuberculous character of the glands being recognized, two lines of treatment are open: First, to secure the removal of the glands before the surrounding structures are involved; or, second, to wait until the structures are broken down, when we have to deal not only with glandular but also with periglandular inflammatory disease.

At the meeting of the British Medical Association, in 1893, it was the consensus of opinion of the section discussing this subject, that medical treatment in itself is of no avail beyond the benefits that come from improving the general tone. The early removal of the glands is advised, first, for esthetic purposes, as late removal of these structures leads to unsightly scars. But their removal for pathologic reasons is more to the point. If the glands can be excised without infecting the surrounding tissues, the wound can be closed, and union by first intention results. If a single gland is found caseous, the other glandular enlargements are probably in a similar condition, and their removal is desirable. Care should be taken to excise the glands entirely, as any tuberculous focus left behind will generate suppurative inflammation. The incision should be free enough to give access to all diseased masses. Some surgeons make a series of small incisions over the individual glands in order to avoid any apparent disfiguration. Others seek to establish a line of incision at a point where the scar will be least visible.

It is particularly to suppurative cases that I desire to call attention. To incise simply the abscess is not to lay bare the tuberculous focus. The diseased gland may simply be connected with it through a sinus. Again, one leaves behind the broken-down tuberculous mass a collection of infectious material. These cases demand free incision, thorough curetment with a Volkmann spoon, disinfection with a sublimate-solution, and packing with iodoform-gauze. The danger of disseminating tuberculous disease by these steps is very small indeed. The operation for the excision of tuberculous glands, whether caseous or suppurative is a perfectly innocent procedure.

There is another phase in which these conditions should be regarded, that is, the danger, if allowed to remain, of remote infection by them. It is a common observation to see individuals with tuberculous glands develop at a later period pulmonary or other forms of tuberculosis. A child that was seen by me two years ago, with tuberculous lymphatics of the neck, and whose mother would not consent to their removal, this summer suffered from an extensive tuberculous iliac abscess.

BONE-TUBERCULOSIS AND JOINT-TUBERCULOSIS. With the ever-increasing fund of knowledge, new principles in tuberculous disease of the bones and joints are being constantly established. It is therefore proper to refer again to this subject. Tuberculosis has a predilection for bones or portions of bones largely made up of cancellous tissue. So we have tuberculosis of the vertebræ or "Pott's disease," manifesting itself as a most frequent form of bone-disease. Of the joints, because of the histologic structure of their bony constituents, the knee and the hip are most frequently affected. In four-fifths of the cases other tuberculous manifestations co-exist.

To diagnosticate the condition before the destructive stage of tuberculosis is reached is most essential. There is every reason to believe that we can arrest the lesions in their early stage. Allowed to suppurate, impaired function and deformity are the best result that can be attained. Chronic joint-inflammation requires surgical rather than medical treatment. Fixed points of tenderness, nocturnal pain, muscular rigidity, and particularly muscular atrophy, impaired function, changed position and form, are to be carefully noted.

Not only does timely treatment secure more serviceable extremities, but with their neglect tuberculous diseases of bones and joints may awaken remote infection. A case that I saw with Dr. Murray and reported by him, in which pulmonary tuberculosis followed upon tuberculous disease of the wrist-joint, exemplifies this. The close relationship between pulmonary tuberculosis and joint-tuberculosis is likewise evident in the subsidence of serious tuberculous lesions in the lungs upon removing a tuberculous joint. As an example of this kind I have to refer to a case seen by me in April, 1886. A tuberculous hip received conservative treatment, and the disease became quiescent. Subsequent traumatism reawakened the trouble; with the recurrence came hectic fever, night-sweats, emaciation, pulmonary invasion, and pulmonary hemorrhage. On the 27th of April, 1887, I resected the hip. Despite the boy's reduced condition, he made a recovery, not only as to the condition of his extremity, but the pulmonary disease became retrogressive, disappeared, and he has remained well since, now seven years.

When the infectious character of bone-tuberculosis became recognized surgeons at once took the ground that the only course to be pursued was the removal of the tuberculous site. This led to an enormous number of minor operations and resections upon the bones and joints in search of the diseased area.

In the early period of tuberculous invasion of joints of the lower extremities nothing has accomplished so much as rest in the recumbent posture, with weight-extension. The period of time to be occupied by this treatment is much longer than is usually deemed necessary. Failure to observe this leads to failure of the treatment. Howard Marsh, one of the most earnest advocates of this line of procedure, states that the average period required for the cure of these cases is about eighteen months. He makes it a rule never to allow a patient to be up until at least three months have passed after the cessation of pain. He has found that the maintenance of the horizontal position for one or two years, in good air, with weight-extension, is not prejudicial to the patient's health. Only once I have found it necessary to continue the confinement in bed over one year. This boy improved in health steadily during the entire period.

When the disease has led to marked organic disturbance, further steps become necessary. During the so-called antiseptic period, and until within a very recent period, operative intervention has been the accepted method for treatment. Under it, Schede and others, in the advanced cases, however, had a mortality of 66 per cent.

Tuberculin, when introduced, was claimed to be a panacea for all tuberculous affections. It was tried in cases of surgical tuberculosis. Much was expected, and its use became general, but in spite of the glowing accounts of its excellent qualities the mortality steadily increased until 75 per cent. of those treated with it who were suffering from tuberculous joint-disease died. On the other hand, a line of procedure has now been instituted which has had most marvellous effects. It is the introduction into the joint of a sterilized solution of iodoform in glycerin or oil; 10 or 20 per cent. solutions are injected. Of the former, ten c.c., that is, two-and-three-quarters drams, and of the latter one-half that quantity is used. At the end of eight days a second injection is made. In the meantime cold applications are applied to the joint. Depending upon the severity of the case, the number of injections varies. Absolute contact with the diseased surface is necessary. Some discontinue its use, if no benefit follows four or five injections. This treatment has been pursued quite extensively in this country, and I have had not a little experience with it. The mortality has fallen to 20 per cent. under the iodoform-emulsion, and the number of resections has been reduced one-half. Upon this point the German surgeons are substantially agreed. Bergmann, for example, prior to 1891, resected from thirty to forty hip-joints annually. During that year, with the same number of cases presenting themselves, he operated upon eleven. Of thirty-six tuberculous knee-joints, thirty-one were cured by injection, and only five had to be operated on. The fixed policy of the German surgeons to-day is not to resort to operative intervention until conservative measures have been given a fair trial.

In France Lannelongue has been using a 10 per cent. solution of zinc chlorid. Instead of injecting it into the joint, he applies it just outside of the diseased area, for the purpose of lighting up there, as Nature herself often does, a reactionary inflammation. He introduces a hypodermic needle into different points about the joint, as close to the attachment of the capsule to the bone as possible, until he has gone completely around it. Before the application the joint is placed in its normal position. The operation is done under antiseptic precautions, with the patient anesthetized. It is not repeated in less than three weeks. Other solutions have been used. One deserving mention is the suggestion of Landerer. In 1892 he began the use of a solution of cinnamic acid, five parts to ten of olive-oil, the yolk of one egg, and 100 parts of a normal saline solution, rendered alkaline before its injection. Of all, however, the iodoform-emulsion alone has established itself securely with the profession.

As to the ultimate course of joint-tuberculosis, one of the most interesting studies presented recently is the report of Bruns to the German Surgical Congress, last April. With Dr. Wagner he carefully reviewed the records of the surgical clinic at Tübingen for the past forty years. Six-hundred cases of hip-joint disease had been treated during this period. Of these, upward of two-hundred are yet alive, and each was personally examined. That no doubtful case might be considered as tuberculous, all that ran a course of less than a year-and-a-half, or such as recovered without impaired function of the joint, were excluded. In this way the number was reduced to 390; 321 had been treated conservatively, and 69 by resection.

Tuberculous coxitis was found to be a disease appearing substantially during the first two decennial periods of life, 85 per cent. of the cases having occurred before the twentieth year. In one-third there had been no suppuration; in the other two-thirds abscesses and sinuses existed; 55 per cent. recovered under conservative treatment, the average period being four years; 40 per cent. died of tuberculous diseases of the internal organs. The appearance of suppuration increased the mortality 23½ per cent. The earlier in life the disease appeared the more favorable was found to be its course. Thus, 65 per cent. of those existing during the first decennium recovered; in the second 56 per cent.; in the third and fourth 28 per cent., while no recoveries occurred in cases appearing after the fiftieth year. A number recovering from the tuberculous disease of the hip-joint succumbed later to other forms of tuberculosis. Those who as children had been severely sick, had been puny and wretched, after a period of from ten to thirty years were found to be perfectly healthy, vigorous, and, though deformed, did not deserve the name of "cripples." Joint-motion was restricted in all; in one-third it was partial; in two-thirds there was almost complete ankylosis. Faulty position existed, usually flexion with abduction, compensated to a certain extent by the pelvis. There was shortening, varying from one to twelve centimeters. Only a German surgeon would so thoroughly follow up a list of cases covering a period of nearly half a century and determine their ultimate outcome.

PERITONEAL TUBERCULOSIS. Permit me to glance hastily at another form of tuberculosis which, during recent years, has become amenable to surgical treatment. I refer to the peritoneal variety. Like forms of tuberculosis attacking other serous cavities, as the pleural or synovial, it is usually dependent upon a neighboring tuberculous focus. It may be associated with the genital tract in woman. Recently it has been discovered that conditions which had presumably been considered purely inflammatory, involving the ovaries and Fallopian tubes, are frequently tuberculous. Tuberculous peritonitis is not by any means restricted to adult life. Hartman, in 1892, collected, almost entirely from French literature, forty-eight cases in which children had been operated upon for tuberculous peritonitis, and only two of whom had died. The disease appears under different forms. First as ascites, in which the fluid is either clear or turbid or occasionally purulent. Here the serous membrane is found studded with miliary tubercles. A second variety presents thick adhesions, walling off this fluid into well-defined cavities and conveying the impression to the clinician of the existence of a localized cystic tumor. In the third group the tissues are matted together, the intestines glued to one another, even to the degree of intestinal obstruction, ulcerated or perforated. The lymphatics are enlarged and caseous at times, but no fluid is present. Pressure may lead to extensive edema of the lower extremities. Such was the condition in a case that I have reported, in which the primary focus was located in a midlumbar vertebra, the retro-peritoneal glands being greatly enlarged and in which there co-existed tuberculous disease of the kidneys and bladder.

Medicinal treatment has proved of but little benefit, although cases have recovered without operation, in which the diagnosis of tuberculous peritonitis has been made. One such case I have seen. Henoch, however, laid down the rule that all cases of chronic peritonitis that recover spontaneously are not tuberculous. As opposed to the medicinal treatment in these cases, the benefits that have almost universally attended celiotomy have been one of the surgical surprises of recent times. How opening the abdominal cavity benefits this condition no one knows. The explanations offered are altogether too numerous to review. The profession is agreed only so far that celiotomy does cure. It seems to be more beneficial in the ascitic cases, whether the fluid be in the free peritoneal cavity or restricted by adhesions. It is of much less benefit in the third group, in which there is no fluid, but in which marked plastic disturbance exists.

The number of cases operated upon is very large. Unless there be general tuberculosis, the operation is not contraindicated. Talleyrand has said statistics are but lying figures, yet probably the result is fairly stated by Koenig, who, in 1891, had collected one-hundred-and-thirty cases, with a death-rate of 3 per cent., and with a record of twenty-three improved and eighty-four cured. Almost the earliest recorded case is that of Spencer Wells, operated in 1862. The patient, an unmarried lady, presented an abdomen distended to the size of a full-term pregnancy. A cyst was suspected, but instead there was ascites, and the peritoneum was found studded with myriads of tubercles. The woman recovered, and now after more than thirty years remains free from any subsequent disturbance. A young lady upon whom I operated upward of four years ago remains perfectly well.

GENITO-URINARY TUBERCULOSIS. The genito-urinary tract is found to be frequently the seat of primary tuberculosis. From the meatus to the supra-renal capsule no tissue seems to have escaped primary invasion, while in both sexes the genital tract, at various points, has likewise been the initial site of tuberculous disease. Occurring in the urinary organs it is not always possible to establish a diagnosis, as the tubercle-bacillus is not readily found until the disease has advanced perhaps beyond operative relief. Schuchardt has remarked that tuberculous invasion is more frequently of venereal than of hematogenous origin. A mixed infection may exist when apparently only the characteristic sore of primary syphilis is present. Later the glands show that there has been tuberculous invasion. With gonorrhea, tuberculous epididymitis has occurred, although the first appearance differs in no regard from ordinary gonorrhea, except that tubercle-bacilli are found associated with the gonococci. The introduction of tubercle-bacilli without laceration of the mucous membrane occurs, he claims, after the manner mentioned earlier in this paper. But, however, entering, the tubercle-bacilli have found in the genito-urinary organs sites most favorable for their development, and when awakened we have to deal with one of the most unfavorable forms of tuberculosis from a prognostic standpoint. When the primary manifestation is in the epididymis, or testicle, the only safeguard against further invasion is the removal of the tuberculous focus, which at least is possible in this situation.

An interesting case of this kind has been under my observation for fully ten years, in which the patient, a clergyman, has suffered from tuberculous disease of the epididymis, prostate, and bladder, and later of the sternum. Under conservative treatment he has been able to continue with his pastoral duties, and is indeed quite vigorous. On November 10, 1893, a patient who had presumably been suffering from an ordinary attack of gonorrhea since the preceding spring presented himself to me with a fistulous opening on the right side of the perineum. Flabby granulations existed at the opening, and the surrounding structures were infiltrated. His attending physician had diagnosticated an ischio-rectal abscess. However the injection of hydrogen dioxid into the sinus found its way out of the urethra at the meatus. A close observation of the case led to the conclusion that it was associated with deep-seated urethral tuberculosis. The wall of what had been a cold abscess and its fistula were curetted clear up to its prostatic commencement, and perineal section was peformed. The bladder was drained by a catheter carried through the perineal orifice for a month, during which period granulations sprang up, and the urethra was walled off from the old abscess-cavity. Slow convalescence followed, and in the course of six months the parts became thoroughly healed and remain so.

When the tuberculous site is higher up, that is to say, either in the bladder or kidney, the outlook is particularly unpromising. Removal of a tuberculous kidney, justifiable only when the disease is limited to one, is, as has been my experience, followed often by death from pulmonary tuberculosis. Nor is it always possible to determine where the primary focus is located. An example of this was found in a patient upon whom I operated at St. Joseph's Hospital, February 18, 1893, for an enormous iliac abscess of the left side. Both anterior and posterior openings were made and several quarts of pus evacuated. A coincident cystitis led me to believe that we were dealing with tuberculous disease of the urinary tract. The opinion was expressed that the kidney was probably the primary source of the infection. Our bacteriologist failed to discover tubercle-bacilli. Later on it became necessary to open through the acetabulum to secure better drainage. The patient improved sufficiently to return to his home. After a brief respite the disease again rapidly advanced, and the man died. Dr. Breese, who had attended him during his sickness, was permitted to make an autopsy, and informed me that a fistulous tract crossed the body to the right kidney, which was disorganized by disease, while the left, upon the side corresponding to the abscess, was not involved.

This many-sided disease could occupy one indefinitely in merely superficially examining its various phases. I had expected to consider other forms in which the surgeon frequently encounters tuberculosis, but I have already occupied too much time.

ANTE-PARTUM OPHTHALMIA NEONATORUM. (INTRA-UTERINE OPHTHALMIA

BY HARRY FRIEDENWALD, M.D.,
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A NUMBER of States have passed laws with a view to decrease the still large proportion of blindness due to ophthalmia neonatorum. Among these States we are happy to name Maryland, whose last Legislature showed its wisdom in enacting a law making it a punishable offence for a midwife or other person having charge of an infant to treat any ophthalmia, and necessitating the calling of a physician. These laws are the outcome of the experience that ophthalmia neonatorum is a very tractable disease when properly cared for. Some physicians have gone so far as to claim that this disease is always curable when treated early. But even our best ophthalmic surgeons occasionally lose a case through corneal involvement, and recent discussion proves that it is an unavoidable accident in an *exceedingly small number* of cases.[1]

It is important to examine into the various conditions under which cases are lost and to determine how they lead to blindness in spite of prophylactic measures and of early and proper treatment.

Ophthalmia neonatorum develops, as a rule, on the second or third day after birth. Infection usually occurs during the passage of the child's head through the vagina. The intervening time is known as the period of incubation, during which the eye presents no signs whatever of disease. This period lasts at least twenty-four hours. It so rarely happens that the disease makes its appearance earlier than the second or third day that none of our text-books makes mention of it. And yet there are a number of cases on record of children born with the well-marked signs of this disease. In these cases the period of incubation had passed, and the stage of inflammation was more or less advanced at birth.

The entire number of such cases that I have been able to collect in medical literature is eighteen. They are as follows:

1. Hirschberg[2] saw a child, twelve hours old, with well-marked ophthalmia neonatorum; there was swelling of the lids, pus in the conjunctival folds, and a diffuse opacity of both corneæ. Labor had been easy, but the membranes had ruptured three days before. The final result was a small

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[1] Randall: Trans. Amer. Ophth. Soc., 1893. Woods: Annals of Ophth. and Otol., 1894.

[2] Beitr. zur prakt. Augenheilk., Berlin, 1876.

leukoma of the right cornea and phthisis bulbi of the left eye.

2. Rivaud-Landrau[1] has published a case of complete destruction of the cornea from ophthalmia two days after birth.

3. Magnus[2] found ophthalmia fully developed five hours after birth. The membranes had ruptured almost three days before. Both corneæ had gray infiltrations at birth. Large opacities remained.

4. Paryschev's[3] case, in which the membranes ruptured three days before birth. There was typical ophthalmia when the child was born, and extensive opacities of the corneæ. The purulent secretion contained many gonococci. He advises prophylactic vaginal irrigation after the membranes have ruptured, using a solution of mercuric chlorid (1 : 2000 or 1 : 3000) for this purpose.

5. Krukenberg[4] demonstrated a child which presented swelling of the eyelids and conjunctiva, and cloudiness of the right cornea, when born. Gonococci were found in the conjunctival secretion (not purulent) and also in the vagina of the mother. The rupture of the membranes had taken place two days before birth.

6. He mentions that Keller had a similar case, in which the rupture of the membranes had occurred seventeen hours before birth.

7. Feis[5] reports a case of marked ophthalmia neonatorum (great swelling of both upper lids and profuse yellow, watery secretion) without involvement of the corneæ. There were gonococci in numbers. The mother had no vaginal discharge, but a greenish-yellow cervical secretion adhered to the examining finger (latent gonorrhea). The vagina was frequently irrigated with a 1½ per cent. solution of carbolic acid. The author believes that the infectious cervical secretion was carried to the eyes of the infant by the examining finger. In Haussmann's *Bindehaut-infektion bei Neugeborenen*, 1882, mention is made of

8. Galezowski's case of ophthalmia neonatorum noticed at birth, but the details are not given.

9. Feis cites a case that occurred at the Vienna "Findelhaus" in 1863. The child was born with both corneæ destroyed and the irides prolapsed, in consequence of intra-uterine ophthalmia.

10. Haussmann[6] reports a case in which redness and swelling of the conjunctiva were noticed at birth, the affection disappearing in several days; the rupture of the membranes had not occurred prematurely. The author assumes that the pathogenic substances had made their way through the unbroken membranes.

11. Winckel[7] has reported a case of ophthalmia in a child when born, but we have been unable to get the details.

Bellouard[1] reports the following cases as occurring in the practice of Dianoux, Guilbaud, and himself.

12. Dianoux had a patient suffering with vaginal blennorrhea for several months. Fearing ophthalmia neonatorum, he used injections of sublimate (1 : 100) and of silver nitrate (1 : 100). Labor was rapid. On account of the numerous injections it was impossible to tell when the membranes had ruptured. One hour after birth a few drops of a 2 per cent. solution of silver nitrate were instilled. In ten hours the lids were tumefied, but the affection was rapidly checked by treatment.

13. Dianoux was called to a case of ophthalmia neonatorum which had made its appearance on the day that the child was born. The inflammation greatly increased, and one cornea was much damaged. The mother had had a vaginitis, but it had been treated with care. The membranes had broken two days before birth.

14. Guilbaud saw a case in which the membranes had ruptured sixty hours before birth. The child's eyelids were enormously swollen when it was born, and pus and blood were discharged when the lids were opened. They were treated with boric acid, and later with silver nitrate, and were completely cured. The mother had had a vaginitis.

15. In one of Bellouard's cases labor began at 3 A.M., at which time the bag of waters was found intact. At 11 A.M. the child was born. Repeated examinations were made by students. At the moment of birth the lids were found agglutinated, red, and swollen. A 2 per cent. solution of silver nitrate was instilled. At 4 P.M., thick greenish pus was discharged. Recovery was rapid. The mother had leukorrhea for four months before labor.

16. In another case of Bellouard's rupture took place nineteen hours before birth, at the beginning of labor. At birth the lids were red and swollen, and three hours later there was an abundant discharge of a thick fluid. The eyes were entirely closed. The mother had a severe vaginitis, and enormous vegetations. In these cases frequent examinations had been made during labor.

17. In Looten's case[2] the child was admitted to the hospital one day after it was born, at which time there was chemosis of the eyelids that had probably existed for at least twenty-four hours. The cornea of one eye was involved.

18. Fers[3] reports the case of a child, born fifty-four hours after rupture of the membranes, presenting well-marked blennorrhea of both eyes. Gonococci were discovered in the secretion.

19. The following case came under my observation at the "Maternité" of Baltimore. The mother had chancroids and venereal warts. The child was born July 2, 1890, the mother having been in labor for two days. The membranes broke at 6.15 A.M., and the child was delivered at 9 A.M. of the same day. Silver nitrate (2 per cent.) was in-

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[1] Cited by Hirschberg.

[2] Zehender's Monatsbl. für Augenheilk., 1887, p. 389.

[3] Summarized in Hirshberg's Centralbl, 1893, p. 64.

[4] Verhandl. d. Gesellsch. f. Geburtsh. und Gynaekol., June, 1891.

[5] Centralbl. f. Gynaekol., 1892, No. 45.

[6] Loc. cit.

[7] Ber. a. d. k. saechs. Entbind. Inst. in Dresden, 1876–78. Leipzig, 1879, vol. iii, p. 217.

[1] Étude sur l'apparition precoce de l'ophtalmie purulente chez les nouveau-nez, par Bellouard. Paris, 1892. Thesis.

[2] Thesis, Paris, 1875. Cited by Bellouard.

[3] North American Practitioner. Cited in Hirschberg's Centralblatt, 1893, p. 557.

stilled immediately; within one hour after birth, when the child was washed, the nurse noticed that there was pus in the eyes, and called the attention of the resident physician, Dr. S. H. Allen, to it. I was called on the following day, and found the eyes discharging a yellowish fluid; there was not much swelling; there were opacities of both corneæ, but no ulcers. The treatment consisted in the application of cold and silver nitrate. The child was discharged July 30th, with large opacities of both corneæ.[1]

These nineteen cases are all that I have been able to collect, though using great care; this indicates that intra-uterine infection is very rare.

When did infection occur in these cases? Probably soon after the rupture of the membranes, the infectious material being carried in most cases by the finger of the examining physician or midwife. In seven cases the rupture occurred between forty-eight and seventy-two hours before birth. In seven the time of rupture is not stated; in two it occurred from seventeen to nineteen hours before birth, and in one (Bellouard, 1) it took place within eight hours; in another (Haussmann) it is said to have occurred shortly before delivery, while in my own case it appeared to have taken place only three hours before. Haussmann assumed that the pathogenic agents passed through the unbroken membranes. Bellouard thinks that there was a lateral rupture of the membranes, sufficiently large to admit the entrance of the poison, but not permitting the entire fluid to escape, for the bag was distinctly felt eight hours before the child was born. In my case the inflammation had passed through the period of incubation, and there was pus in the conjunctival sacs at birth; infection must have occurred at least twenty-four hours before birth, and twenty-one hours before the amniotic fluid escaped. I am unwilling to accept Haussmann's explanation,[2] that the poison passed through the unbroken membranes, and think it more likely that there is an error of observation, *i.e.*, that there was an earlier rupture than stated, with probably partial discharge of the fluid, as is assumed by Bellouard.

As the infection occurs at varying lengths of time before delivery we should expect to find the inflammation in different stages of development. This is actually the case. Thus, in some the inflammation began to show itself a few hours after birth, and in one the eyes were completely destroyed at birth.

The number of eyes that were thus lost by corneal involvement is exceedingly large. The result is stated in fourteen of the cases; in five of these the cornea escaped, but in nine corneal opacities resulted. Though the total number of cases reported is not large, still we do not hesitate to call this form of ophthalmia exceedingly dangerous. We would attribute the virulence of these cases in part to the prolonged contact of the eyes with the poison. In cases in which infection occurs during the short time that it takes for the head to pass through the vagina, the contact may be very short, and then the eyes are almost always immediately washed. The duration of contact in cases of intra-uterine infection may be hours or even days.

It is interesting to consider the question of prophylaxis as applied to these cases. The application of Credé's method would appear to us to be of service in those cases only in which the infection was very recent. Bellouard ascribes much benefit to it in Cases 12 and 15, but it was used in my case without benefit. Bellouard suggests the use of vaginal injections, especially in those cases in which the membranes rupture early. Pareschev used injections of mercuric chlorid (1 : 2000 or 1 : 3000) without benefit. Feis made frequent irrigations with one-and-a-half per cent. solution of carbolic acid, without preventing the appearance of the inflammation at birth; Dianoux applied mercuric chlorid (1 : 100) and silver nitrate (1 : 100) frequently in the form of vaginal injections, besides Credé's method, and still the ophthalmia developed ten hours after birth. Aside from the danger of the use of such strong solutions of mercury, it appears that their benefit is far from having been proved, though they would seem to be indicated.

This form of ophthalmia neonatorum is fortunately very rare, as is shown by the meager number of cases reported, as well as by the fact that such large statistical tables as those of Credé appear to be unaffected by it.

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[1] Since writing this paper the following notes have been received from Dr. Edith Eareckson, of this city: She was called to attend a colored girl in her second confinement, March 17, 1893, and was informed that the membranes had ruptured eight hours before she arrived. The labor was tedious, there being a face-presentation, and the child was not born till seven hours later. At birth the eyelids were much swollen and tightly closed. When forced open to use Credé's preventive, silver nitrate, muco-pus jetted out. The eyes were washed as thoroughly as possible with a solution of mercuric chlorid, and a 1 per cent. solution of silver nitrate was dropped in. Nine hours later much pus was again found in both eyes. The condition of the corneæ was not noted. After the fifth day the case passed out of her treatment, and nothing further was heard of it.

[2] This assumption is also made by Nieden, Zehender's Monatsbl., 1891, p. 353, to explain the appearance of an ophthalmia in an infant born in unbroken membranes. The child was taken out of the sac by the physician with the greatest care. And yet the eyes became inflamed in twenty-four hours in the characteristic manner, though gonococci were not to be found in the secretion. Nieden assumes that the amniotic fluid was infected by the diffusion of a poisonous substance which was capable of producing an inflammation similar to that due to the gonococci, though less intense and more rapidly cured. We are, however, unwilling to accept this explanation, and believe that direct infection took place, even though much care was exercised.

LOCAL ELECTROLYSIS AND ZINC-AMALGAM CATAPHORESIS IN MALIGNANT AND NON-MALIGNANT TUMORS.[1]

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Before reporting the three cases on which this new treatment of morbid growths is mainly based I must explain what I mean by local electrolysis and zinc-amalgam cataphoresis, and also advance reasons for my belief that these methods, either separately or together, present important advantages over cutting operations in certain cases of benign vascular growths and incipient carcinomata.

Local electrolysis means simply that the electric decomposition of the tissue-salts is confined to a localized area by the approximation of the poles. If both poles of a galvanic current be placed in the morbid tissue quite near each other, the bulk of the current will be concentrated within the tissue immediately between them, and but little will traverse the outside healthy parts. In practice they should not be further apart than from a half to one inch, though this depends entirely on the strength of the current to be used and the size of the growth. So placed, an enormous current may be employed to dissolve a morbid tissue without affecting the surrounding tissues, the parts having been chilled by a spray or otherwise, if sensitive, rendered anesthetic. The surgical possibilities of such currents are quite remarkable. All the salts and liquids of a given growth lying between the points become a prey to such a current, the watery contents being turned into oxygen and hydrogen gases, and the complex salts into solutions of acids and alkalies. This is, of course, attended with a material rise of temperature, but nothing like charring. If the tissue subjected to the process is soft and vascular or juicy, there will be very little left between the poles after the gas has been given off, but the acids and alkalies dissolved in a turbid liquid remainder. If the tissue is tougher and more fibrous, a gristly residue will be found which can be detached or left to be detached by nature.

The strength of current required to destroy tissue in this way depends altogether on its concentration at the active spot. A minute reproduction of the process occurs when we apply but two or three milliampères to the papilla of a hair-sheath or to a mole on the skin ; but to dissolve completely tissues between two or more needles a half-inch apart requires a current of at least from 400 to 700 milliampères.

Whether this portion of my method has any advantages over a cutting operation in removing malignant or non-malignant external growths depends upon circumstances. It is clearly inapplicable to any growth within the body unless it is situated in a drainable natural cavity, as a considerable quantity of detritus must drain away. It also presents the disadvantage of not permitting healthy tissues to be united at once over the seat of the removed growth, a procedure, however, that is often of doubtful utility, as it frequently covers up portions of the disease that failed to be removed. The advantages of the method over the knife are, on the other hand, by no means inconsiderable. It is absolutely bloodless, no matter where applied, thus enormously conserving strength after operations notoriously bloody ; the edges of the undestroyed tissue remain non-absorbent, lessening risk of sepsis ; and finally there seems to be some property in the galvanic current to cause a retrogression of the whole of a benign growth, even when but a portion is directly acted on, as in the Apostoli treatment of fibroids, and the ordinary treatment of moles and other small skin-tumors.

If the growth be a benign one, the application described will probably cover the whole of the active treatment. If it be malignant, on the contrary, the second portion of the method—zinc-amalgam cataphoresis—is employed, a procedure of great value in radically removing all remaining traces of a still localized carcinomatous growth.

Zinc-amalgam cataphoresis is electrically monopolar, the single active electrode, which is always positive, being applied to the cavity left by the removal of the greater portion of the growth, while the indifferent or negative electrode, in the shape of large conducting pads connected together, is placed on any convenient part of the body. The active electrode is a freely amalgamated zinc surface of one or two square centimeters area, which is held successively against all portions of the bottom and edge of the excavation. From 150 to 300 milliampères are sufficient, the pain being controlled by cocain in solution placed in the excavation beneath the electrode, to be conveyed into the tissues simultaneously with the nascent zinc oxy-chlorid and mercury, which are dissolved from the electrode by electrolysis.

By this procedure we search out and destroy all remaining spurs and paths of infection in the contiguous unhealthy and healthy tissues, the current seeking vascular and cellular paths of less resistance by preference in its journey to the other pole ; and to the lethal effect of the current we add the well-known lethal effects of nascent compounds of mercury and zinc. The surface of the amalgamated zinc electrode is consumed in the process—the mercury as well as the zinc—producing a mixed infiltration of the immediate polar region that is readily detected by the eye. Low organisms in the immediate neighborhood of the electrode quickly succumb, and the antiseptic value of the procedure is shown in the correction of any odors that may have accompanied the carcinomatous discharge. That the action is not confined to the immediate neighborhood of the electrode was well demonstrated in one case in which the zone-like base of a carcinoma was observed to lose its induration and shrink in places distant at least an inch from the contact-point.

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[1] Read before the Philadelphia County Medical Society, January 9, 1895.

The applicability of the first portion of the method—local electrolysis—to a benign growth was shown in the following case:

Case I. *Large intra-uterine cystic fibroid destroyed piecemeal by repeated applications of bipolar electrolysis, resulting in a satisfactory cure.*—Mrs. D., a nullipara, aged thirty-nine years, was referred to me by Drs. Hemminger and Bixler, of Carlisle, Pa., in September, 1892. Six or seven years previously Dr. Hemminger had discovered an intra-uterine growth, the lower portion of which was later found to be projecting from the dilated os, giving rise to pain and hemorrhage. Efforts to remove the growth by the écraseur were made by Dr. Hemminger, but, owing to its extensive internal attachment and great vascularity, only the projecting parts were removed. When I first saw the patient the tumor was nearly the size of an adult head, the upper limit being even with the navel. The mass was symmetric in shape, soft, and semi-fluctuating. Examination showed the os fully dilated, through which projected a portion of the tumor the size of a fetal head. Around this projecting mass several fingers could be swept, showing freedom from adhesion to the uterus for three inches anteriorly and about six inches posteriorly. The mass was evidently a vasculo-cystic fibroid situated within the cavity of the uterus and attached to the uterine walls throughout three-quarters of its periphery. It was spongy, but very tough, bled easily, and gave rise to a copious watery leukorrhea. The conditions presented by this growth, particularly its cystic degeneration, absolutely contra-indicated the ordinary Apostoli treatment of fibroids, on account of the danger of producing sepsis. I accordingly attempted its removal by morcellement, using the scissors, the dull scalpel, and the fingers, but was compelled to desist, owing to the frightful hemorrhage. In this dilemma the possibilities of localized destructive electrolysis occurred to me, and it was begun by the use of a bipolar instrument having four prongs, two to each pole. These prongs were buried in the projecting portion of the tumor and a current of 700 milliampères turned on for six minutes. This dissolved quite a hole in the morbid tissue, making the spot too hot for the finger. The procedure was repeated daily without hemorrhage or marked discomfort, as fresh portions of the growth were pressed down by the contracting uterus the possibility of sepsis being guarded against by a continuous douche for an hour or more after each application. Three months were consumed in the eradication of the tumor in this way, though it doubtless could be done in a second case in a third of the time, the final examination showing nothing but a roughened spot on the anterior wall of the contracted uterus. External measurements now showed the upper limit of the uterus two-and-a-half inches below the navel. The cavity was capacious.

A letter from Dr. Bixler, dated February 26, 1894, stated that the patient was quite restored to health, complaining only of prolapse of the vaginal walls, the latter doubtless due to the descent into the pelvis of a uterus that had so long been within the abdomen. The cavity was still large, and there was some thickening of the walls on both the right and left of the uterus. The os would admit only the first joint of the finger.

In November, 1894, two years after the patient's admission, her husband called and reported that she was in good health.

Case II. *Sarcoma of tonsil and soft palate cured by local electrolysis followed by zinc-amalgam cataphoresis.*—W. H. L., a blacksmith, aged thirty-eight years, was also referred to me by Dr. Hemminger, February 17, 1893. Five years before he had had an abscess of the left ear. Two years before being seen by me the left tonsil was found to be the seat of a tumor. He had recently been sent to the Hospital of the University of Pennsylvania, where he says malignancy was diagnosticated and an operation urged, which he declined.

A tumor about the size of a goose-egg filled the pharynx, involving the tonsil and the soft palate, and threatening suffocation. Liquids only could be swallowed, and these with increasing difficulty.

The patient was placed on monopolar negative puncture with a current of from 30 to 60 milliampères daily. But little progress being apparent at the end of a week, the parts were cocainized, and on two occasions subjected to bipolar local electrolysis with a current of from 200 to 350 milliampères. The separation of the eschar that resulted was accompanied by some pain and reaction, but as the place healed it was seen that but a small portion of the growth remained. The man did not return for further treatment until more than a year had elapsed, during which he seemed to be well. At this time, however, a renewal of the growth occurred, and it was about the size of a peach-stone when he was readmitted to the Howard Hospital. During this second treatment zinc-amalgam cataphoresis was mainly employed, the treatment lasting six weeks, and being carried deeply into the base of the growth. A complete cure resulted, and at the examination of the parts six months later a healthy scar only was to be seen.

Case III. *Inoperable carcinoma of the groin greatly relieved by zinc-amalgam cataphoresis; death from erosion of femoral artery and vein.*—Col. H., aged sixty-two years, was sent to me by Dr. A.W. Knox, of Raleigh, N. C., in the summer of 1893. One year before he had noticed a lump in the left groin. When first seen the tumor was the size of a large walnut, of a bluish color, and firmly attached by a broad base to the deeper parts of the thigh. It was situated just below Poupart's ligament, and lay immediately over the femoral artery and vein, and was apparently attached to the latter, though the exact location of the artery was uncertain owing to the general induration.

At the patient's request it was decided to make a tentative use of electricity. The central and projecting portion was accordingly destroyed by local electrolysis, making a slight cavity into which a solution of cocain was poured. Into this the blunt amalgamated zinc-electrode was pressed and daily applications of the cataphoresis made, with currents averaging 150 milliampères. The immediate effect of the application was to whiten the edge of the growth in contact with the electrode, the whitened coating peeling off later. The indurated ring and base that now represented the growth was about three inches wide. Under constant applications the whole of this was gradually destroyed and replaced by healthy granulations, except the center of the base, where the close proximity of the large artery rendered the applications unwise. At the end of three months the diseased area had been contracted to the size of a five-cent piece, but there was a deep cavity extending down to the great vessels, where it was thought to be unsafe to apply the current. The patient had increased twenty pounds in weight, and though he had been brought on a stretcher, he was now able to walk a half-mile or more. During the continuance of this improved condition, however, the artery suddenly gave way one day at the bottom of the untreated spot. Drs. Thos. S. K. and T. G. Morton were called in consultation, and the former tied both artery and vein, which were found thoroughly infiltrated with carcinomatous material for some distance upward into the abdomen. Gangrene of the limb supervened, followed by death two weeks later.

An estimate of the value of the method in these three cases must be comparative, as cases similar to each are usually subjected to other methods, removal with the knife being the favorite. Hysterectomy in the first case would, of course, have involved removal of the ovaries also. Both this and removal of the uterus itself were avoided entirely, no natural structures being even injured, and the time required in the treatment was probably not longer than that necessary to recovery from the effects of abdominal section. In the second case the bloodless removal of a sarcoma of the palate was followed by a treatment of the neighboring parts that I hope will render the patient less liable to a return of the disease. The third case was, of course, a failure to cure or to preserve life, yet it is thought that life was prolonged by the very evident curtailment of the growth and improvement of health. Comparisons were hardly possible, however, as an operation had been refused by one surgeon as useless.

212 South Fifteenth Street.

THE RELATIVE AGE-OCCURRENCE OF COLLES' FRACTURE—A TABLE OF NINE-HUNDRED-AND-EIGHTY-EIGHT CASES.

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In June, 1890, while serving as surgeon to outpatients at the New York Hospital, my attention was called to the large number of boys and young men who came under my care suffering with fracture at the lower end of the radius. A considerable proportion of the fractures were transverse; many were oblique, and had the typical deformity of the "Colles'" fracture. In many instances the injury had been diagnosticated as a sprain, and the patient had been told to use the limb, when pain and disability, with, perhaps, increasing deformity, led the sufferer to seek advice at the hospital. So many boys and youths presented this lesion that I passed in review the cases which had previously been under my care at the Chambers Street Hospital, and gained the impression that the percentage occurring at this age is greater than is generally thought or taught. I believe that I am not wrong in saying that it is generally supposed that the Colles' fracture occurs most often in women, and in women between forty and sixty years of age.

An exact definition of Colles' fracture is not easily given. Originally the term was applied to those lesions at the lower end of the radius accompanied by the typical "silver-fork" deformity. This deformity may be pronounced, or it may be so slight as to be practically unnoticed. As a rule, the more oblique the line of fracture the greater the deformity. It is not infrequently seen, however, in cases in which the bony lesion seems on palpation to be practically transverse. In the greater number of cases the line of fracture is between one-half inch and one inch above the articular surface. It may be less or more than this. It has seemed wise to me, therefore, to include under the head of "Colles'" all fractures, completely traversing the radius below a point one-and-one-half or two inches above the articular surface.[1] This would include, of course, diastases.

As I have said, my attention was so strongly called to this frequency in boys that I looked up the cases treated at the Chambers Street Hospital between December, 1878, and June, 1888,[2] and those in the out-patient department (second surgical) of the New York Hospital, between January, 1888, and June, 1890, the latter date representing the time at which the list was made. The result of this investigation is shown in Table A and the accompanying chart. It is seen that in males nearly one-half (201 cases out of 590) occurred in the second decade, while in females the greater number (132 out of 398) were found in the first decade. Attention is called to the proportion occurring in males, 590 cases out of 988.

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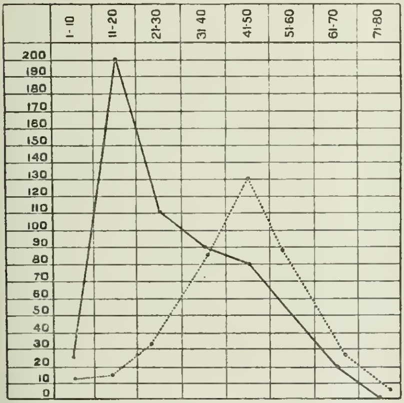
[1] 1½ inches in children, 2 inches in adults.

[2] If I remember rightly, this period was taken as representing the incumbency of Dr Bull as chief surgeon. During a considerable portion of this time I served on the staff as house-officer and out-patient surgeon. The date of January, 1888, re-

TABLE A.

Ages.	Males.	Females.	Total.
1 to 10	37	11	48
11 " 20	201	13	214
21 " 30	110	32	142
31 " 40	88	86	174
41 " 50	79	132	211
51 " 60	52	87	139
61 " 70	21	28	49
71 " 80	2	9	11
Total	590	398	988

CHART.



The continuous line represents males, the dotted line females.

In this connection it may not be amiss to state the character of the districts which furnished these cases. The House of Relief of the New York Hospital (formerly known as the Chambers Street Hospital, now occupying the new building known as the Hudson Street Hospital) is situated in the lower part of New York, and draws its out-patients from a large and crowded tenement-house district, as well as from the immense factories and workshops and traffic-laden streets. The out-patient department of the New York Hospital in Fifteenth Street is recruited largely from the tenement-houses of the West Side. It is very possible that an equal number of these accidents occurring in private practice might furnish charts of a different character. My own private practice has, however, furnished a number of cases in patients under twenty years, of which the following may serve as an illustration:

In September, 1894, I was asked by Dr. J. W. O'Connor, of this city, to see W. E., a boy of eight years, who gave a history of having sustained an injury to both wrists some four weeks previously. He had been seen by the family physician, who had made a diagnosis of sprain, and had treated the case accordingly. Pain, disability, and deformity had led the parents to take the lad to Dr. O'Connor, who had recognized the true nature of the lesion. On examination both wrists were found the seat of Colles' fracture. The deformity was typical in each instance, the lower fragment being thrown back and to the radial side. The line of fracture seemed oblique, just above the carpal articulation. There was firm union. Ether was administered, and vigorous attempts made to refracture, but without avail. In view of the moderate degree of the deformity osteotomy was thought inadvisable.

I have seen other similar cases in which a diagnosis of sprain had been made. It is not improbable that what would seem, after union had taken place, to have been an oblique fracture was originally a transverse diastasis, but that early use, before union, has thrown the lower fragment backward. In this way patients who return to work too early may occasion a marked deformity.

We should, then, carefully examine young people with injured wrists for fracture. The diagnosis can generally be made, if seen early, by obtaining false motion and a soft crepitus. In some cases, however, it may be difficult. As Stimson says: "In difficult cases, fat people and children, without displacement, it may be made upon the existence of a well-defined transverse line of tenderness, or pressure on the dorsum of the radius, deepening of the transverse folds on the palmar aspect of the wrist, loss of power in the limb, and history of the case." The only table with which I am able, at this time, to compare my own is that quoted by this author (*Treatise on Fractures*, p. 323). In this the fractures of the entire radius are given:

Ages.	Males.	Females.
0 to 5	62	64
5 " 15	92	19
15 " 30	78	45
30 " 45	75	57
45 " 60	45	123
Above 60	21	87
	373	395
Total	768	

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presents my appointment at the New York Hospital, and the cases there are from my private notes. A few cases in private practice are included.

The accompanying chart represents cases which returned to the hospital for treatment. A considerable number in addition had a single dressing applied, and failed to reappear. I do not assume that it is to be accepted as conclusive, and simply offer it as a contribution to a subject of much interest, and hope that surgeons who have access to the records of a considerable number of cases may be led to place their statistics on record.

A CONTRIBUTION TO THE STUDY OF OCCIPITO-POSTERIOR POSITION OF THE VERTEX.

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THE notes forming the basis of this paper are the result of a detailed study of twenty-nine cases of vertex-presentation, with the occiput to the back. In each particular instance the diagnosis was confirmed by other physicians after labor was fully established. A brief analytic study of the cases in question shows that twenty, or more than two-thirds of the entire number, rotated to the front, unaided by any manual interference whatsoever, and were delivered normally, with the occiput under the pubes. Of the nine in which spontaneous rotation did not take place, one was complicated by a prolapsed cord, demanding immediate podalic version and extraction. Another occurred in a pelvis having a conjugata vera of but three-and-a-half inches. In this case the occiput was twice manually rotated to the front and axis-traction forceps applied, but all efforts at delivery failed. Internal podalic version under complete narcosis was then elected, easily accomplished, and a successful extraction followed.

Of the seven cases not already considered, three were forceps-operations at the superior strait, with the head but partly engaged. In the remaining four the head had descended to the pelvic floor, with the occiput in the hollow of the sacrum. In all of these instrumental cases, save one, the occiput remained persistently to the back; hence the frequent occurrence of tears in the pelvic floor. These lacerations of the vagina, levator, and perineal body were immediately repaired, special care being taken to approximate the deep muscular structures. Union by first intention occurred in 85 per cent. of the cases operated upon. In but one case was the child stillborn. From the foregoing facts it will be seen that a large majority of posterior positions of the occiput are delivered without the obstetrician's interference, after anterior rotation has taken place. In cases ending thus favorably there is but little added danger to either mother or child. Spontaneous rotation may occur at the superior strait, in the cavity of the pelvis, or on the pelvic floor. From a considerable experience in midwifery I am led to believe that this malposition—for such it is—is of much more frequent occurrence than is generally conceded by most authors, as many of these posterior cases remain unrecognized, owing to the difficulty in diagnosis during the early stages of labor. Again, a large percentage rotate to the front unaided, and are recorded as anterior positions; hence the statistics on this subject are of little value.

An existing disproportion between the head and pelvis is not infrequently met with, preventing proper flexion and engagement, so that dystocia follows, and operative delivery is very often too late to be successful; hence the need of early and accurate diagnosis. Furthermore, the forceps should never be applied until such relations have been carefully determined and possible malpositions corrected. To recognize these conditions after labor is established and a caput formed presents no little difficulty; hence I urge that when there is doubt as to the exact relation that a head bears to a particular pelvis, the patient be chloroformed and the aseptic hand passed into the uterus. This procedure will at once end any such uncertainty. With the hand thus introduced improper flexion of the head may be rectified or the occiput may be manually rotated to the front. It is well to remember, if such rotation be attempted, that it is necessary not only to rotate the occiput, but also to turn the body to the front. This is best accomplished by grasping the posterior shoulder with the internal hand and turning the dorsum to the front; external aid facilitates this manipulation. Early diagnosis and postural methods in this class of malpositions are frequently all that is necessary to terminate labor normally. As rotation takes place at the brim, in the cavity, or on the pelvic floor, so the treatment of each individual case will differ as to the stage of progress in the mechanism.

At the brim (before the head has engaged) the employment of postural methods frequently results in the normal termination of labor. The patient should be placed in the left or right latero-prone position, depending on whether the child's dorsum and occiput point toward the left or the right side of the mother. In one of the cases making the basis of this paper, use of the Trendelenburg[1] posture aided very materially in preserving the normal mechanism. This position offers all of the advantages of the genu-pectoral without the discomforts of the latter to both physician and patient. Should these methods fail, manual rectification or podalic version may be elected. The former procedure deserves consideration when the pelvis is ample, and the dorsum, as well as the occiput, can be rotated to the front. This failing, or should the occiput, after being once turned anteriorly, again rotate to the back, complete podalic version should at once be instituted, not waiting until the amniotic fluid has entirely escaped, and the operation be complicated by a spastic uterus.

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[1] As suggested by Dr. Fry, of Washington, in the management of mento-posterior cases, May, 1894.

Should any disproportion exist between the head and the pelvis, version may be elected. The extraction of the after-coming head through a flattened pelvis of slight degree is more easily accomplished, by reason of the overlapping of the parietal and underriding of the occipital bones, than the delivery of the fore-coming head under like circumstances. The application of forceps to a head floating about at the superior strait, whether of an axis-traction model or not, is a procedure that deserves the condemnation of careful obstetricians.

In the cavity of the pelvis (when the head has entered the superior strait and is descending, the occiput being shunted to the back by the incline of the levator-ani muscle) rotation may be promoted by keeping the patient in the latero-prone position, having her lie on the side toward which the occiput points. Since beginning this paper I have had two opportunities to utilize a method suggested by Penrose in the management of mento-posterior positions, *i. e.*, the whole hand is introduced into the vagina, the palmar surface corresponding to the position of the occiput. The palmar surfaces of the fingers act as a lateral inclined plane, shunting downward, forward, and inward, while the thumb pushes the sinciput upward and backward, promoting perfect flexion and rotation. This manipulation should only be employed during the pains. Should impaction occur, the axis-traction forceps may accomplish delivery, the head rotating during its descent. I must take issue with the few who forcibly rotate the occiput to the front while the head is well down in the pelvic basin, as at this stage simultaneous rotation of the shoulders is not apt to occur without a dangerous amount of torsion of the neck. When delivery is found to be impossible because of impaction of the occiput in the hollow of the sacrum, symphysiotomy or craniotomy may be elected according to indications.

With the head on the pelvic floor (at the vaginal outlet) the occiput can, in a very large proportion of the cases, be rotated to the pubes "by backward pressure with the fingers against the anterior temple, combined, if necessary, with forward pressure upon the occiput." Should this method fail, rotation may usually be accomplished with a short pair of straight forceps.

Forceps to a posterior vertex as such, with the head on the pelvic floor, is not a difficult operation, though the mechanism and direction of traction must be very closely observed.

Short, straight forceps accomplish delivery most readily. The traction is made directly forward until the root of the nose is immediately behind the pubic arch. The line of traction is then changed to the third position, perfect flexion of the head being preserved by upward pressure against the sinciput with the thumb, while a finger of the same hand in the rectum aids in shelling out the head by dislodging the occiput.

CLINICAL MEMORANDA.

ERYSIPELAS AS A COMPLICATION OR SEQUELA.

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THE importance to the physician of a knowledge of the inherent pathologic proclivity of a given patient, aside from any present disease, cannot be too strongly emphasized. Heredity, though losing ground as a clinical factor since the advent of germ-pathology, must not be underrated. Cachexy or diathesis may be obscure, yet none the less powerful in shaping pathologic processes when intercurrent disease has lowered the system's vital tone. Co-existent with and interdependent upon the malady we are called upon to treat, this deep-seated morbid trend determines the erratic course of disease, it may be causes a fatal issue or simply retards convalescence, all the time probably unrecognized. Important among such tendencies, not to speak of obvious pathologic states of the same, are struma in the young; and in the adult pulmonary tuberculosis, malaria, and that to which special attention is here called, viz., erysipelas.

Since the advent of influenza, five winters ago, I have observed several persons in whom erysipelas occurred as a complication or sequel, the primary affection always being atypical. In all these cases the persons were subject to recurrent attacks of erysipelas.

I propose to detail three distinct attacks that occurred in the same person, giving prominence to the features alluded to.

M. R., forty years of age, the mother of six children, was portly, but had, in general, good health. Independent of the malady in question she enjoyed the immunity from disease of the average of her age. She was prone to have an occasional attack of erysipelas, always of some part of the head. So was her mother, and also her mother's mother. Previously to my meeting her she had two or more attacks.

The first attack to which attention is called occurred during the epidemic of influenza, in January, 1892. In common with the rest of the family she contracted the disease, of a mild type. When convalescence was expected she took to bed with a chill, marked fever, and profound constitutional depression. The local lesion appeared on the hairy scalp; but was, however, insignificant when compared with the systemic disturbance. Being in the eighth month of pregnancy, premature labor was feared; and, indeed, painful contractions occurred at intervals during thirty-six hours. This was successfully averted, however, by the use of quiet and opium.

In due time convalescence came, and later a perfect child was born at full term. Though the woman was in labor for twenty-four hours, and required forceps to effect the delivery, convalescence after labor was uninterrupted and complete.

In August of the same year she was taken with acute tonsillitis, for which the usual remedies proved speedily efficacious. Febrile action had ceased, and the tonsils had again apparently returned to their normal condition, when, on the fifth day, there was an unusual development in the case, marked by chill, hyperpyrexia, violent headache, and great swelling of the fauces. At once the tonsils showed a thick white coat in patches. The question of immediate isolation seemed paramount; but suspecting an invasion of the old trouble I deferred the diagnosis to the sixth day, meanwhile placing certain restrictions upon the rest of the family.

On the sixth day high fever, great depression, at times a muttering delirium, foul breath, approximating tonsils, and difficult respiration were the symptoms that marked the case. The question was: Erysipelas of the fauces or diphtheria, which? Knowing the morbid proclivity of my patient, and taking into consideration the shade of the swelling, her age, the mode of attack, and the facility with which the coating was detached from the tonsils, I pronounced the case one of erysipelas of the fauces. The developments in the case confirmed my diagnosis. Sustaining treatment, soothing local applications, liquid food, quiet and rest, were followed by complete recovery.

In connection with this case I recall the following episode: The hamlet was greatly alarmed. Many feared an outbreak of diphtheria, and scrupulously kept aloof. One old gossip, a large-hearted soul, was a frequent caller, and even ventured to supplement treatment. On returning to the quiet bed-chamber one morning I at once detected more than the fetor of the patient's breath. Upon inquiry I was informed that Mrs. M. had applied a poultice which was known to be highly valuable in such cases. Her poultice consisted of freshly-dropped hog manure. I need not add that as soon as enough light and vent could be had this "animal extract" was hurled to the street below.

During February of the past year I was called to deliver this woman of her eighth child. Labor was normal, but convalescence was slow and discouraging. Tenderness and sharp pain centering in the right inguinal region, accompanied by a mild degree of fever, appeared the first day and continued four days. Calomel and sodium bicarbonate, āā gr. ss., with acetanilid, gr. iv, repeated every two hours, removed all pain. The stools became frequent, liquid, and bloody; and continued so in diminishing degree for several days. The temperature became normal on the fourth day. At this time there was a slight chill and return of fever, which continued one week. With the return of the fever she began to complain of soreness of the tongue. This was mainly on the right side, where a broken molar tooth had irritated the organ. Her continued weakened state kept me on the alert for an outbreak of erysipelas which had now appeared in the form of erysipelatous glossitis. On the second day after the chill, as I entered the room, the patient informed me that the old trouble had returned; "for," said she in muttered speech, "I can taste it." Inspection confirmed her diagnosis. The tongue was uniformly involved and now completely filled the mouth. The lesion was strictly confined to the tongue. Treatment similar to that employed in the attack of erysipelas of the fauces was instituted, and in the second week she was again found mending.

My knowledge of this proneness to recurring attacks of erysipelas in this patient, as in others to which I can but allude here, enabled me to employ early those supporting measures upon which life depended. How to explain the etiology and the apparent heredity of this proclivity in the light of accepted pathology are questions for others.

CARCINOMA OF THE RIGHT MAXILLARY ANTRUM.[1]

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SURGEON TO THROAT, NOSE, AND EAR DISPENSARY,
PRESBYTERIAN HOSPITAL, PHILADELPHIA, PA.

R. T., a colored woman, whose age was not exactly known, but who was probably in the neighborhood of sixty years old, was first seen at the clinic of the Presbyterian Hospital on March 13, 1893. She gave a history of nasal trouble of over three months' duration, during which time she had been under constant treatment elsewhere, and had been several times cauterized. There was stoppage of the right side of the nose, with considerable discharge, both muco-purulent and crusty. Coincidently with the nasal trouble, she said, she began to have pain in the right ear, with dulness in hearing. The pain extended to the back of the neck, and there was stiffness of the jaw, with pain on opening the mouth widely. The patient claimed to have had no nasal trouble previously to this attack. The family history was hard to obtain and unsatisfactory.

Examination showed the right nostril filled with mucopus. The lower turbinate was somewhat enlarged, but the middle turbinate was much enlarged and inflamed. A posterior view was not obtainable. The pharynx was not much congested. The right membrana tympani was considerably thickened; the left thickened and opaque, and in the posterior lower segment, below the malleus handle, were some chalk concretions.

As the last "burning" had been but recently done I attributed the inflammation to that, and prescribed a weak alkaline wash, to be used twice daily.

On March 29, 1893, the patient returned, still complaining of the discharge and stoppage. The inflammation seemed to have decreased, and attached to the right middle turbinate posteriorly was what appeared to be a large raspberry polyp. Its removal by the cold snare was followed by copious epistaxis, not, however, sufficient to be alarming. The nostril was plugged with gauze for a short time, but this was soon removed.

The sensation afforded by the snare while cutting through the growth was peculiar and hard to describe, but very characteristic. It was as if the tissue was emphysematous and the fibers brittle.

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[1] Read (by invitation) before the Laryngological Section of the College of Physicians, December 11, 1894.

The polyp showed nothing peculiar except that there were some evidences of inflammation and small connective-tissue trabeculæ running through it.

Microscopic examination was not made.

On April 3, 1893, the woman again returned with the discharge persistent. Examination showed the middle turbinate still swollen and very much inflamed. There had been one or two attacks of epistaxis, not of long duration, but very free while they lasted. The aural pain still persisted. She was again given a nasal wash, hoping that a few days would reduce the inflammation and allow more extended examination.

The patient did not return after this, and on the first of May the dispensary nurse looked her up, finding her at home and in bad condition.

She was immediately brought to the hospital and admitted to Dr. H. R. Wharton's ward. Through his kindness I was enabled to see her there. The first visit confirmed to my mind the diagnosis of carcinoma, which I had before guardedly made. There was swelling of the entire right side of the face; the right eye was prominent, and the lids edematous, with considerable conjunctivitis and discharge, owing to inability to close them. The pain in the ear was still severe and persistent. The temperature varied slightly from 99°. Operation was thought inadvisable, and the patient gradually sank and died from exhaustion on May 12th.

The autopsy was made by Dr. H. W. Cattell, and from his notes, supplemented by later examination of the specimens, which I was privileged by the family to remove, we obtain the following:

A large extra-dural mass involved the neighborhood of the sphenoid bone superiorly, extending anteriorly to the crista galli and the orbital plate of the frontal bone on the right side. Posteriorly it extended nearly to the anterior margin of the petrous bone. The sella turcica seemed broken down and incorporated in the mass, which was of a soft consistence, and was infiltrated with pockets of sanious pus. The right optic foramen was much enlarged and the bones disorganized. The eye on that side was diseased, shrunken, and discharging pus. The optic nerve in its backward course penetrated the mass of new growth and soon became unrecognizable. The cavity of the tympanum was not affected, the bones and membrane being intact. Below, the right maxillary antrum was filled with a gelatinous mass mixed with pus. The bony walls were apparently sound except posteriorly, where they were eroded. The lower turbinate was not enlarged anteriorly, but posteriorly had reached a large size. The middle turbinate was much involved, being enlarged in its whole extent. The septum was not affected. The growth and position of the mass pointed to an origin in the antrum. Microscopic examination of a specimen from there showed it to be a carcinoma.

108 S. SEVENTEENTH STREET.

Meharry Medical College.—The nineteenth annual commencement of Meharry Medical College, the ninth of the dental department and the sixth of the pharmaceutic department of the Central Tennessee College, were held on February 5th, at Nashville, Tenn. There were twenty-nine graduates in medicine, two in dentistry, and five in pharmacy, and the interesting feature is that all were colored men.

A CASE OF FORMATION OF A NEW LID BY TRANSPLANTATION OF SKIN WITHOUT PEDICLE (WOLFE'S OPERATION).[1]

BY HOWARD F. HANSELL, M.D.,
OF PHILADELPHIA,
CHIEF OF CLINIC OPHTHALMOLOGICAL DEPARTMENT, JEFFERSON MEDICAL COLLEGE HOSPITAL, ADJUNCT PROFESSOR OF DISEASES OF THE EYE, PHILADELPHIA POLYCLINIC.

IN February, 1893, X. Y., a married woman of intemperate habits, applied at the Out-Patient Eye Department of the Jefferson Medical College Hospital, during the service of Prof. William Thomson, for relief of an extremely disfiguring deformity of the upper lid of the left eye. Several months previously, while temporarily unable to control her movements, she fell down a short flight of steps, striking the left side of her face against a hard substance and breaking the skin. Erysipelatous inflammation and abscesses followed. After recovery the upper lid of the left eye was completely everted and held fixed in its new position by a firm, dense, horizontal, linear cicatrix, which united its ciliary border to the skin beneath the supra-orbital margin, entirely obliterating the normal exterior lid-surface. The conjunctiva was thickened, indurated, and congested from constant exposure to wind and atmospheric impurities. The cornea remained clear, vision good, and no disturbance of the function of the eye was found. While undecided as to the best method of operation, I had the opportunity, through the courtesy of Dr. G. E. de Schweinitz, to examine a case in which he had transplanted a piece of skin without a pedicle after the removal of an epithelioma involving the entire lower eyelid. (*Transactions American Ophthalmological Society, 1894.*) The result had been so satisfactory after the lapse of nearly a year that I determined to attempt a similar operation. Accordingly, a few days later, under ether, I loosened the ciliary border of the lid from its abnormal attachment, excised the cicatrix into which the skin of the upper lid had been transformed, restored the lid to its normal position, and retained it by stitching the margins of the two lids together. Thus the denuded surface was stretched and its folds obliterated. The surface thus exposed measured about 20 mm. vertically and 25 mm. horizontally. From the inner aspect of the thigh a flap of skin 35 by 40 mm. and as deep as the subcutaneous tissue, but not including it, was removed, having previously been thoroughly cleansed by ablutions with warm water and soap and made aseptic by mercuric-chlorid solutions. The excised portion of skin was subjected to no intermediate treatment, but was at once transferred to its future site, and carefully spread, so that there was an overlapping of about 5 mm. on every side. The free border was then sutured in the adjacent healthy parts, and the whole covered with a moist mercuric-chlorid dressing, and held by a roller bandage. The wound on the thigh healed, without interruption, by granulation. Union between the transplanted and the underlying tissue, fostered by the immovable and continually expanded position in which the lid was held by the sutures, seemed to commence from the outset, and grew more firm daily. The overlying edges shrivelled and blackened, and, in a few days, were trimmed off and the sutures removed. The result is excellent. At present, ten months after operation, the only noticeable defects are the slightly lighter color of the flap, as compared with the adjacent skin, and the presence of a few fine hairs. The patient suffers no inconvenience whatever, although, on account of a shrinking of a third of the original area of the transplanted tissue, she cannot completely close the commissure.

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[1] Exhibited before the Section of Ophthalmology of the College of Physicians, November, 1894.

Contraction of the graft, which is the only disadvantage of operating by Wolfe's method, does not seriously modify the result when performed on those portions of the body where there is naturally a redundancy of skin and connective tissue, since its place is supplied by neighboring parts. Death of the epithelium, noticed by some operators, was not a feature in my case, and, if it occurred, escaped observation. The superiority of this over operations with a pedicle lies in the achievement of a good result with a minimum deformity, and is applicable especially to exposed surfaces.

NEW DEVICE.

A NEW INSTRUMENT FOR MARKING THE SKULL IN BRAIN-OPERATIONS.

By CLAYTON PARKHILL, M.D.,
OF DENVER, COLO.,
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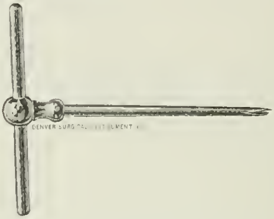
While operating in a case of brain-tumor several years ago I was making use of a small drill to mark the skull in conformity with the measurements that had been made upon the scalp. To my surprise, and at the same time chagrin, the instrument passed directly through the skull and was driven into the brain. On removing the button of bone I found that, owing to the pressure of the tumor the skull had atrophied until it was scarcely thicker than an egg-shell. This experience, however, taught me that the instrument was not the proper one for making the markings. Larger drills are objectionable on account of the laceration of the soft tissues. Again, I have been embarrassed on several occasions by the fact that it was difficult to distinguish the marks made on the skull by the point of a drill from the foramina in the bone. I have had the Denver Surgical Instrument Company make for me an instrument for this purpose, which is shown in the accompanying cut. It consists of a shaft 9 cm. in length with a cross-bar handle 8 cm. The end of the shaft is divided into two portions or legs, one projecting beyond the other to the extent of 1 mm. This longer leg is made triangular, like the stylet of a trephine. The shorter leg, which is separated by two mm. from the longer one, is pointed, and its right side is knife-edged.

To use this instrument it is thrust through a small puncture in the scalp made with a scalpel. By turning it from left to right the longer leg becomes engaged in the bone and the short leg swings about this point as a center and describes a circle. The action is identical with that of a carpenter's compass. The knife-blade of the short leg is made in order that it may cut the periosteum as it is turned.

The advantages in using this instrument are: 1. It is thrust through a very small, clean-cut wound in the scalp. 2. The instrument is sufficiently large, so that it would be pure carelessness if it were thrust through even the thinnest skull. 3. It makes a mark that cannot be mistaken for anything else.



I have used this instrument in quite a number of brain-cases in the last two years, and I have found it to be eminently satisfactory. I take pleasure in commending it to the profession.

MEDICAL PROGRESS.

Successful Trephining for Right Hemiplegia with Epilepsy.—Wood and Cotterell (*British Medical Journal*, No. 1775, p. 10) have reported the case of a girl, three-and-one-quarter years old, who presented weakness and inability to use the right hand, arm, and leg, together with a history of epileptic attacks. At the age of one year, the child had fallen from the top of a hay-rick, without immediately bad results. In the course of a few weeks, however, what appears to have been an epileptic seizure occurred. She fell, became unconscious, and lost power in the right arm and leg. Some six months later, two other seizures of similar kind occurred, and several again one year after this. The convulsive movements always commenced in the right thumb and fingers. On examination it was found that the left supraparietal region was distinctly flattened and sloping straight away from the vertex, the parietal eminence appearing to be pushed down and becoming more abruptly prominent than upon the opposite side. The eyes presented no lesion. The right arm was shorter than the left and cold and bluish-red in color. The movements were confined to flexion at the elbow-joint, which was necessarily limited by the general rigidity of the limb. The thumb was held across the palm of the hand, and, like the fingers and wrist, remained strongly flexed. The leg was rigid, the foot inverted, and walking could only be accomplished with great difficulty and with support.

An exploratory operation was decided upon and a semicircular flap, four inches long, was reflected up from the left parietal region. The periosteum was raised over an area of about two inches, the center of which corresponded to the middle of the flattened region. A disc of bone was removed by means of a three-fourths inch trephine from a point corresponding to the middle of the fissure of Rolando. The opening thus made was enlarged with cutting forceps. The dura mater was opened, and directly underneath there appeared a small cyst filled with serous fluid, situated apparently under or between the layers of the arachnoid. The dura mater was thickened over the cyst and adherent in places. The adhesions were separated and two pieces of the external wall of the cyst were removed. The dura mater was stitched up, except at the lower angle, a catgut drain inserted and the wound closed. The child was collapsed after the operation, but quickly rallied. The wound healed by first intention, except in the track of the drain. A large amount of cerebro-spinal fluid escaped through the dressing for three or four days, but the wound was completely healed in the course of nine days after the operation. The child rapidly improved, notwithstanding attacks of whooping-cough and chickenpox. Six weeks after the operation the child was able to walk without support. The hand could be opened spontaneously, and no fits had occurred. The improvement steadily continued until there remained very little of the hemiplegic condition.

Removal by Celiotomy of a Sarcoma of the Right Kidney from a Child a Year-and-a-Quarter Old.—GÖRL (*Centralblatt für die Krankheiten der Harn- und Sexual-Organe*, 1894, No. 10, p. 530) has reported the case of a boy, who, when eight months old, began to fail in health, and in whom the mother observed a sense of relative hardness upon the right side of the abdomen. There was also constipation, and to this was ascribed the abnormal physical condition. When the child was fourteen months old, a tumor was distinctly visible. This gradually increased in size, and there became superadded pain, emaciation, and debility. The tumor was oval, elastic, and movable, both laterally and vertically. It was easily separable from the liver, and did not move with the diaphragm in respiration. It could readily be felt to originate from the posterior wall of the abdominal cavity. The urine presented no abnormality, but the diagnosis of malignant growth of the kidney was made. Operation was undertaken when the child was sixteen months old, and the symptoms had existed for eight months.

In view of the not inconsiderable size of the neoplasm, its removal through the peritoneal cavity was undertaken. After the abdominal cavity had been opened by an incision along the outer margin of the right rectus muscle, from the costal margin almost to Poupart's ligament, the peritoneum covering in the anterior surface of the tumor was incised and the peritoneal covering dissected off with the fingers. The growth was now brought to the abdominal opening and its posterior coverings split. The ureter and the renal veins were ligated, and the hilus divided. The tumor was removed, and the abdominal wound closed and appropriately dressed. The operation occupied but a quarter of an hour, and was well borne by the little patient. The excretion of urine was distinctly increased, and so continued for four weeks. At first the secretion contained some blood.

The further course of the case was favorable, so that the sutures could be removed on the tenth day, when primary union was found to have taken place.

For the protection of the line of the abdominal wound a binder was worn for a number of weeks. The condition of the child rapidly improved, and the patient appeared perfectly well five months after the operation. He was able to run around eight weeks after the operation.

The removed neoplasm was somewhat pear-shaped, and had a diameter of five-and-a-half inches. At its superior pole were the remains of the kidney. Histologically, the new growth presented the appearance of a small round-celled sarcoma.

Two Cases of Hysterical Blindness in Males, with Recovery.—BARKAN (*Festschr. zum 25 Jähr, Jubilaeum des Vereins Deutscher Aerzte* 1894) has reported two cases of complete blindness in hysterical men, with recovery. One occurred in a mine-engineer, thirty-two years old, in whose hands a jar of tomato-catsup exploded in the process of opening. The patient was struck in the face and eyes by fragments of glass, and, in attempting to reach a source of water for the purpose of removing the blood, his foot slipped, and he fell and lost consciousness for some hours. On returning to consciousness he was unable to see. There was also complaint of severe occipital pain. Under treatment with morphin, and blisters to the temples and behind the ears, light-perception and a slight degree of vision were restored. The eyelids were closed spasmodically, so that cocain had to be employed to facilitate examination. It was found that the right eye had been wounded at the corneoscleral margin, where the iris had become adherent, so that the pupil was pear-shaped, and reacted but slightly to light. The media were clear and the eye-ground normal. The left pupil was slightly dilated and reacted doubtfully to light. The media and fundus were also normal.

In the absence of organic change sufficient to account for the loss of sight, the diagnosis of hysteria was made and a favorable prognosis given. Injections of strychnin, gr. $\frac{1}{25}$, were prescribed, together with applications of the constant current, and iron, nutritious diet, systematic out-door exercise, cold sponging and massage. The black covering that had been used to protect the eyes was replaced by dark glasses. Improvement soon set in, but was temporarily interrupted by an interruption in treatment. This was, however, subsequently resumed, and the patient progressed to final recovery.

The second case occurred in a steward, thirty years old, who, after the ingestion of medicine furnished by a druggist for the relief of pains in the hips and arms, at once noticed impairment of vision. Several months previously vision in the right eye had been lost, and subsequently that in the left eye became dull. There was also severe and constant pain in the left eye and left half of the head, aggravated by the recumbent position and flexion of the head. The right cornea presented a central cicatrix and a turbidity of the capsule of the lens in a corresponding situation, both of which were ascribed to an ophthalmia during infancy, followed by corneal ulceration and perforation. The media and fundus were normal in both eyes. Improvement soon followed applications of the constant current.

Subcutaneous Torsion of the Spermatic Cord for Prostatic Hypertrophy.—RICHMOND (*British Medical Journal*, No. 1780, p. 339) suggests as a substitute for orchectomy for the relief of prostatic hypertrophy *bistournage* or subcutaneous torsion of the spermatic cord, with the view of cutting off the blood-supply of the testis and causing its subsequent atrophy.

THERAPEUTIC NOTES.

The Treatment of Diphtheria with the Antitoxin.—WITTHAUER (*Therapeutische Monatshefte*, 1895, Heft 2, p. 67) has reported the employment of the antitoxin in the treatment of thirty-six cases of diphtheria, with five deaths. In addition the following solution was employed as a gargle: Solution of ferric chlorid, 5 parts; glycerin and absolute alcohol, each 7½ parts. Of this fifteen drops were added to a glass of water.

At a recent meeting of the Ophthalmological Society of the United Kingdom JESSOP (*British Medical Journal*, No. 1780, p. 304) reported two cases of diphtheric conjunctivitis successfully treated with the antitoxin. The first was in a boy, nineteen months old, who presented membrane upon the upper and lower palpebral conjunctiva of the left eye, and a patch of membrane on the left side of the uvula; a lymphatic gland over the parotid was enlarged, and the urine contained albumin. Three injections of Klein's antitoxin were given, one-and-one-half drams in all. The membrane disappeared in five days, and left no conjunctivitis or other conjunctival change. In the second case, in a male child, eight months old, there was membrane on the palpebral conjunctiva of both eyes; the parotid lymphatic glands were enlarged, and there was a muco-purulent discharge from the nose. Two injections of Klein's antitoxin, one dram in all, were given, and the membrane disappeared in four days. Examination of the membrane in both cases disclosed the presence of diphtheria-bacilli.

Of 330 children received at the Hôpital des Enfants Malades in Paris, 258 of whom were recognized as diphtheric and were treated solely with the antitoxin and tonics, 31 died (12 per cent.). Of the fatal cases, eight died within twenty-four hours of admission and without having had time to receive the treatment.—*Lancet*, No. 3728, p. 377.

At a recent meeting of the Royal Medical Society of Vienna MONTI (*British Medical Journal*, No. 1781, p. 385) related that he had treated 25 cases of diphtheria with the antitoxin, with but a single death.

HEIM reported that of 27 cases of diphtheria similarly treated from October 6 to November 4, 1894, six died (22 per cent.), while among 236 cases treated during the year previously by other methods the mortality was 52.4 per cent. The average mortality for ten years ending with 1894 was 51.1 per cent.; the lowest rate was 25.9 per cent. in 1886, and the highest 58.7 per cent. in 1892.

UNTERHOLZNER stated that he had treated 37 cases between October 11, 1894, and January 10, 1895, with the serum, with eight deaths, five of which occurred within twenty-four hours of admission. He presented tables showing that among 31 cases treated with the serum there were eight deaths (25.8 per cent.), while among 36 cases treated without serum there were twenty-four deaths (66.6 per cent.). The second group included many mild cases.

KOLISKO (*Wiener medizinische Blätter*, 1895, No. 5, p. 75) reported the results of 75 post-mortem examinations of children dead of diphtheria and treated with the antitoxin. There was no doubt of the favorable influence of the treatment upon the diphtheric process. If a sufficient dose was employed and a reasonable time had elapsed, rapid and equable exfoliation of the membranes was to be observed. The changes were most striking in cases of descending croup. The membranes were readily detached, because the administration of the antitoxin checked the formation of the toxins upon which the production of fibrin depended. The varying severity of the process was not believed to be an expression of various forms of the disease, but rather of various stages, as the process may have been long unobserved in circumscribed areas. The degenerative changes in the heart and the renal affections did not differ from those of ordinary occurrence. The local reaction at the seat of injection was so variable as to suggest differences in the fluid used. As direct results of the injection a streptococcous abscess and a phlegmon were observed. Cultivation-experiments in a case of erythema yielded negative results.

Among 30 cases of diphtheria treated by RAUCHFUSS (*Lancet*, No. 3729, p. 451) with the antitoxin, 19 recovered and 11 died (36.6 per cent.), while among a similar number treated during the same period with other measures the mortality was 52 per cent.

ESCHERICH (*Münchener medicin. Wochenschr.*, 1895, No. 7, p. 155) has treated 51 cases of diphtheria with the antitoxin, with five deaths (9.5 per cent.). Three of the fatal cases were in a hopeless condition when they came under observation.

The Treatment of Eclampsia.—GUBAROFF (*Centralblatt für Gynäkologie*, 1895, No. 5, p. 127) recommends a mode of treatment that he has successfully employed in six cases of eclampsia, three of which presented grave symptoms. The treatment consisted in the administration of narcotics, principally morphin in moderate but frequently repeated doses (gr. ¼ subcutaneously about six times in the twenty-four hours, according to the amount of urine); enemata of chloral, and only during operative procedures (including catheterization) mild chloroform-narcosis. All measures tending to stimulate the activity of the skin or to replace this vicariously were freely resorted to. These included warm baths, though but infrequently; moist warm packs constantly, and several times daily friction with a solution of vinegar, salt and alcohol, and dry hot-air baths. In all cases the bowels were freely evacuated as early as possible by means of salines (equal parts of sodium sulphate and magnesium sulphate). Besides, careful attention was given to the functions of the kidneys. These were stimulated by the administration of milk and mineral waters, and the application of heat in the lumbar region over the kidney by means of a large rectangular hot-water bag. Only in one case was bleeding practised.

For Coryza in Children.—

℞.—Atropinæ sulph. . . .	gr. $\frac{1}{600}$.
Morphinæ sulph. . . .	gr. $\frac{1}{60}$.
Quininæ sulph.	gr. $\frac{1}{10}$.
Strychninæ sulph. . . .	gr. $\frac{1}{240}$.
Acidi arseniosi	gr. $\frac{1}{240}$.—M.

Ft. pil. To be taken every hour until dryness of the throat is felt, and then followed by minute doses of apomorphin every two hours.

—TAYLOR, *Phila. Polyclinic*, vol. iv, No. 7.

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SATURDAY, MARCH 9, 1895.

THE APOTHEOSIS OF HYSTERIA AND WHIMSICALITY.

ONE of the functions of a medical journal is to notify its readers of the appearance of new and important medical works, and so deeply are we impressed with the transcendent importance of one such book recently issued, that we believe we are doing a great service to medicine by a somewhat extended and free advertisement of it. It is by W. A. DEWEY, M.D., a late professor of materia medica, an editor and associate editor of numerous medical journals, an author and associate author of several medical works, a member of many medical societies. The last title the learned author gives himself on the title-page of his book is simply this: "*Homœopathic, etc., etc.*," which reminds one of a drug catalogued by the New York homeopathic druggist, SWAN, as "Omnia." The book to which we call especial attention is entitled: *Essentials of Homœopathic Therapeutics, being a Quiz Compend upon the Application of Homœopathic Remedies to Diseased States*, and is published by Bœricke & Tafel, Philadelphia, 1895.

"One of the grand cardinal features of homœopathy," says the author in his preface, "and one little understood by the allopathic school, is the fact that any drug in the entire homœopathic materia medica may be a remedy in any diseased state. It is, therefore, evident that the preparation of this work entailed no little difficulty, etc." In view of the infinite multiplication of "remedies," and of the numerous different "potentizations" of each, together with the literally bewildering multiplication of "symptoms" or "provings," this modest qualifying reservation is very appropriate, as otherwise all the books that have ever been printed could not contain the possible "Application of Homœopathic Remedies to Diseased States."

Before passing to the subject-matter of the volume we cannot forbear a word of criticism as to the strange fatality that makes it impossible for our homeopathic friends to write sentences according to the fundamental rules of English grammar. In reading this remarkable work, for example, we seem to hear the echoes of some half-forgotten *patois* in which philologic crudities, barbarisms, and grammatic impossibilities vie in vain with pseudo-scientific whimsicalities and medievalisms. The very contractions used of the names of drugs make one smile, as, *e. g.*, croton tig., carbo veg., Lyc., carbo an., Kali bich., etc. How can one who knows that the word *blepharospasm* itself means twitching of the lids speak of "a blepharospasmus twitching of the eyelids?" To one not conversant with occultism, the works of Mme. BLAVATSKY, or the strange use of language by the homeopaths, a large number of the sentences are absolutely devoid of meaning. One wonders how symptoms can be called "female symptoms," or "male symptoms," what sentences without verbs can signify, what the personification of drugs betokens, etc. Of these grammatic peculiarities, of which certainly every second sentence is an illustration, we quote a few examples that have attracted the attention:

> The sensations are throbbing, which is intense and sudden, and the pains are apt to cease as suddenly as they appeared.
>
> Stramonium has visions of animals coming towards him from every corner.
>
> It is a hoarse, croupy cough, but withal a loose edge.
>
> The patient clutches the air; sometimes a stupor, which, if aroused out of, they strike people.
>
> The child appears to have but one bowel extending from mouth to anus.
>
> The diarrhea of Thuja is a chronic diarrhea traceable to vaccination forcibly expelled like water from a bung-hole.
>
> What drug has nausea at the thought of food? even mention food and he vomits.
>
> Gulping up of burning water.

The patient is excitable, restless and fidgety. They are awkward and clumsy.

Where does Kali bich. come in?

What drug has a great deal of depression about his chest, is tearful and discouraged, and fears that he will go into decline?

Patient thinks she will go crazy, is suspicious, has visions of rats, etc.; is conscious, but can't help it.

Stannum has characteristically falling of the womb during hard stools.

In glancing through this volume one is struck by the almost maniacal revelling in the nasty. Every possible discharge or excretory product of the body (our author would call it "a secretion from the body") is described, with a vividness of language, and with a fond enumeration of the morbid varieties and of their unexampled filthiness; the catalogues of Rabelais pale before the telling word-pictures of our author. This is undoubtedly due to the habit of treating symptoms rather than to a distinctly Rabelaisian type of mind however. This fact may also explain why *spermatorrhea* has the consideration of nearly three pages, whilst *peritonitis* has but half a page; why diseases of women require nine pages, whilst tuberculosis and "phthisis" combined require but three.

But this enumeration of symptoms—what awful absence of the sense of humor does it show, the perfect solemnity with which this apotheosis of hysteria is set down! A person, we suppose, has taken an infinitesimal amount of "carbo veg." and whatever morbid whims pass through his fancy for days are supposed to be "provings" of the drug, although any amount of carbo veg. in the shape of toasted bread may be eaten at other times.

Thus "*phosphorus* has evening hoarseness, while *Causticum* has morning hoarseness," "*lilium* is worse in the afternoon, *sepia* in the forenoon." One drug produces a sensation in the right arm, another in the left arm. One produces headache over only the left eye, or pain in the left ovary, headache upon one side of the head ("the pains following the course of the sun"), etc.

The explanation of a number of national traits is suggested by the assurance that among the mental symptoms of gelsemium is mentioned, "does not seem to care whether school keeps or not;" among those of Platina, "the patient is proud and haughty; looks down upon everybody with disdain; everybody seems beneath her;" among those of Baptisia, "He thinks he is scattered about, and he must move to get his pieces together again;" in children chamomilla produces the very human trait: "want to be carried about, and want different things, and when they get them throw them away dissatisfied." Our neighbors, the Britishers, have often wondered why we Americans "like to sit with the feet on the table." They may now understand that it is due to "the effect of carbo veg. on the liver." Profanity, it would logically seem, might be lessened by restricting the sale of nitric acid.

In private practice we have often been told by patients that they had been given medicines for cataract for years by homeopathic practisers, and lo! here, Anno Domini 1895, is phosphorus commended therefor!

It is little wonder that the animosity against the "allopath" is so great that a drug having a general exercising or purifying effect is recommended as "the first remedy to use if the case comes from allopathic hands."

Quotation is better and more just to the talented author than any setting forth of his teachings in our own poor words. We therefore give free permission to scissors, to wit:

What drug has amenorrhea from getting feet wet?

What drugs have backache worse while sitting?

Arsenicum lacks the tingling of *secale*, and wants to be warmly wrapped up. *Secale* wants to be cool, and lacks the anxious tossing about and restlessness of *arsenicum*.

Mention three drugs having colic from a fit of anger.

All muriates have crumbly stools.

What drug has convulsions in children from rich food?

What drug has a cough that is worse when strangers are present?

In the diarrhea of aloes the patient loses confidence in his sphincter.

Arsenic wants little and often, *apis* thirstless. The bloating in *apocynum* is on the side on which he lies. *Arsenic* in the extremities. *Apis* under the eyes.

What drug has pain in the right eye as if it were pushed out of the head, worse near a warm stove?

What are the symptoms to China in dyspepsia?

What drug especially desires oysters?

What drugs have the symptom that the patient has to loosen the clothing after eating?

When a hemorrhage is due to a strain or misstep cinnamomum is to be given.

Belladonna is relieved by being propped up in bed, while *sanguinaria* has relief from lying down. *Belladonna* was not so marked.

What drugs have headaches relieved by copious urination?

What peculiar symptom has Oleander in the head? Headache relieved by looking sideways.

Arsenic has hypertrophy of the heart, resulting from climbing high places.

"Castoreum the secretion from the beaver" (sic) is recommended for "women who are pretty near the hysterics."

Where do the pains of Croton tiglium go upon nursing? To the back.

What drug has the symptom that the patient predicts the hour of death?

What drugs have hasty speech and hasty drinking?

What symptoms has anacardium? It produces a weak memory; he imagines he hears voices, and another condition is a propensity to swear; it is mental condition, and it does not exist as a condition of low morals.

What other drug produces a disposition to swear? Nitric acid?

The *staphisagria* child is impetuous and irritable, reminding one of *chamomilla.*

What are the mental symptoms of sepia? The patient is low-spirited, cries readily; weak memory; there is sadness and irritability; it will not do to find fault with her; there is also perfect indifference, especially to household affairs and to her own family; the patient is easily offended; she dreads to be alone, wants company, but has an aversion to her own friends.

How is *Sepia* distinguished from *Pulsatilla?* Both have weeping, anxiety, peevishness, and are ill-humored; but *Pulsatilla*, only, has the mild, clinging disposition calling for consolation; she makes her grief known and asks sympathy. The *Sepia* patient is worse from gentle exercise, but is relieved by violent exercise.

What drugs have the symptom that the patient has to think how words are spelled? (*Spelling-reformers will take notice!*)

What are the mental symptoms of sulphur? Patient fears she will not be saved; there is anxiety about her own soul, but perfectly indifferent about the souls of others.

With Hepar sulph. the patient is especially sad in the evening, and does not wish to see members of his own family. (*And thus at last is an explanation and a cure assured for a sad social custom!*)

With antimonium crudum the crossness of children is increased by washing them with water.

With gelsemium the patient does not seem to care whether school keeps or not.

What is the Graphites temperament in general? Sad, fat, fair and constipated.

What drug has the symptom that the soul feels as though it were freed from the body?

What drug has special action on the right wrist?

The *Natrum carb.* patient gets very nervous during thunder storms and hides in the cellar. This nervousness is said to be due to the electrical condition of the atmosphere acting on such patients.

Pulsatilla is mild, tearful and whimsical. *Sepia* is depressed, easily excited and irritable. *Pulsatilla*—blondes. *Sepia*—brunettes.

What drug cures nymphomania from worms crawling into vagina and there causing irritation.

What drugs have especially sensitiveness to coitus?

What are the menses of calcarea carb?

What drug has menses flowing only in daytime when about on feet?

What drug has early and scanty menses in tall slender females?

Medicine is a serious study and the medical life is proverbially a solemn one. Perhaps we have quoted too extensively from our valued author, but his teachings we trust may be found at least temporarily a good "regular" dose antidotal of the gloominess of our calling. The richest and most perfect humor in the world is the unconscious variety, that wherein the most profoundly earnest joker dreams least of all things that he is producing a work that will inspire most uproarious laughter in thousands of readers.

But after the laugh the return to work! After the fun the payment of the bills! Thereupon come the indignation and the disgust—the thought that it is for the encouragement of this sort of nauseating drivel that our aristocratic society gives "charity balls;" for this that our legislators vote hundreds of thousands of dollars of the people's money; this gibbering ghost of medieval medicine it is that an intelligent and discriminating people call the "new school!"

STATE APPROPRIATIONS FOR PRIVATE HOSPITALS.

Before the Pennsylvania State Legislature the various charitable institutions have laid their applications for appropriations for the years 1895 and 1896. The amounts asked for by hospitals of the third class, that is, hospitals owned and controlled by private corporations, are

For the year 1895	$1,446,211 93
" " " 1896	1,019,500 00

About one-half of this is for new buildings or for removing debts of mortgage, and one-half for maintenance.

When an individual endows a bed in a hospital he has a right to send anyone there, at any time, to occupy such a bed. When the State gives a grant of $50,000 it virtually endows ten beds, yet does not possess any right to such beds. The only place a poor incurable tuberculous or other invalid needing the attention a hospital can give has a right to go is the Philadelphia Hospital, and here, alas, there is but little room for him.

The private hospitals often obtain their appropriations only through strong lobbying, and if a charity has a "pull" it can get almost anything it wants.

A few individuals organize a hospital, largely and principally for their own benefit, and then obtain appropriations from the Legislature, by which they can erect costly buildings and bring themselves into prominence.

If institutions are to receive State aid, they should be under State control, and where it is found that over-lapping exists, that one institution can do the work of two, the other should be dropped from the State list.

The following Philadelphia hospitals are represented in the applications:

Name of hospital.	Amount asked for 1895.	Amount asked for 1896.	Amount received in past six years.
Hahnemann	$67,000	$50,000	$73,546
University	50,000	50,000	135,000, 4 yrs.
“ Maternity	5,000	5,000	
“ Veterinary	5,000	5,000	30,000, 4 yrs.
St. Timothy's	12,500	12,500	7,000, 2 yrs.
Kensington, for Women	13,500	5,000	5,000, 2 yrs.
Polyclinic	25,000	25,000	87,000
Jefferson	50,000	50,000	130,000
Woman's	25,000	25,000	25,000
Howard	2,500	2,500	
Medico-Chirurgical	82,500	82,500	170,000
Rush Hospital	75,000	75,000	
West Phila., for Women	12,500	12,500	
Women's Homeopathic	17,400	17,400	67,000
Children's “	17,000	17,000	8,000, 2 yrs.
St. Cristopher's	5,000	5,000	
Philad'a Lying-in Charity	7,500	7,500	15,000
Southeastern Dispensary	2,500	2,500	
Orthopedic	23,500	23,500	30,000
Maternity	8,000	5,000	15,000
Gynecean	20,000	15,000	85,000
Wills Eye	10,000	10,000	40,000, 4 yrs.
Samaritan	30,000	30,000	
German	10,000	10,000	40,000, 4 yrs.
Hospital for Incurables	20,000	20,000	

It will be noticed that all of the foregoing institutions, with the exception of Wills Eye Hospital, which is in trust of the city, are strictly private concerns. They are not obliged to render account to any public official. The funds received may or may not be applied to the purposes for which they are asked.

The Governor has but recently stated that economy is necessary in the affairs of the State. Let the Appropriation Committee turn to the private hospitals first.

We want a State Hospital for Epileptics and two or three for tuberculosis, but let these be managed by the State as the hospitals for the insane are.

We hope that the medical profession of Pennsylvania will enter a protest against indiscriminate grants to private charities, and ask that State moneys be applied to institutions under State control.

EDITORIAL COMMENTS.

As to Physio medicalism.—We have received two letters concerning "errors" and "falsehoods" contained in the little historic article of Dr. Nichols on Physiomedicalism in The Medical News of February 9, 1895. Although we are not responsible for the opinions expressed in signed contributions to our columns, we shall make brief answer to these criticisms editorially, because of our lack of space to accommodate both our critics and our contributor with replies and again replies. As to matters of opinion and of medical philosophy, they are beyond our present province or interest; as to matters of accuracy in the statements of fact, they may be summarized as follows:

1. That Thomson's views were accepted by good and intelligent men of "cultured Boston" and New England, and, therefore, the views were true, and the man was "a man of talents and skill." The acceptance of an opinion by all the John Quincys, Batemans, etc., of New England, makes the opinion neither true nor false. If our critic will go to Boston to-day, he will find Harvard professors and the "bluest blood" of that quack-ridden city consulting clairvoyants, faith-curists, layers-on of hands, mesmerists, and spiritualistic mediums. Thus, as the critic would agree, instead of the aristocratic profession of faith proving the truth of the faith, it may only prove the intellectual degeneracy and *bêtise* of the aristocrat.

2. One of Dr. Nichols' critics (Dr. William H. Cook, of Chicago) takes exception to the statement that lobelia, capsicum, and the vapor-bath are the chief remedies of physio-medicalism. The information was derived from the writings of Alva Curtis and of Dr. Cook himself. (*Review of Allopathy and Defense of Physio-medicalism.*)

3. The critics contend that lobelia is not a poison, etc. The statement that lobelia is a poison is, we believe, the view generally held by such authorities as Bartholow, H. C. Wood, etc., Ringer to the contrary notwithstanding. Numerous references to fatal cases of poisoning may be found in the *Catalogue of the Army and Medical Library.* The statement that botanic practisers have been repeatedly tried and convicted for manslaughter caused by lobelia-poisoning was based on an article in the *Medical Times and Gazette*, of London, volume viii (1854), page 491, in which is given a list of thirteen cases of lobelia-poisoning in the three or four years preceding, in six of which a verdict of manslaughter was rendered. It was not said that there were ever any convictions of this character in America, nor do we think there have been.

Untruthful Clinical Histories.—If one asks a reputable English physician in reference to the statistics and character of a certain compatriot whose name and writings are well known, one is greatly puzzled at the fact that he gets no satisfactory answer. The one questioned probably stares silently into the air, with a tormenting expression of quizzical self-restraint, or he says something about his ignorance concerning the gentleman mentioned, or he cautiously hazards a word or two as regards the weather. After receiving such "answers" several times, if one "bulldozes" a friend and promises absolute secrecy, one may finally get a solution of the mystery in the brutal remark which bursts forth as if from a too-long-restrained reservoir: "Oh! He's an infernal liar! You can't believe a word he says."

Truth compels us to admit that the English by no means have a monopoly of the article in question. Undoubtedly, one must not believe all the vindictive sneers and scandal that is or that may be set going by jealous rivals or personal enemies. Undoubtedly, also, there are entirely too many such malicious stories passed from none too clean mouths to avid ears. But again, undoubtedly, there is one, or, perhaps, there are several specimens of the genus liar in the medical profession. Beyond question, also, these specimens are infinitely better known than they themselves suspect. Very recently a physician read before a large society a paper, since much reproduced and quoted, in which he took decided grounds against the position previously assumed by one whose conservatism, honesty, and scientific quality of mind are beyond question. His opposition was bolstered up by reports of cases. As the reports were read a clinical assistant of the reader, sitting on a back seat with several friends, introduced parenthetic remarks, *sotto voce*, to the effect that one "cured" case had lately returned no better than before the cure, that another had not been buried from the hospital, that yet another had been sent home to die, etc.

Here is concealed a fallacy that more or less vitiates all medical statistics, and induces the undiscerning to repeat an operation or a method of treatment to the cost of the patient and to the shame of the physician. He who in the least falsifies his clinical reports is a criminal against his profession and against humanity.

Phonography in Medicine.—There can be no question that a medical man fortified with an ability to write short-hand possesses a decided advantage over one who lacks this accomplishment. Too much importance cannot be attached to the making of full and detailed clinical records, but the difficulties are numerous and great, particularly in private practice, where the work cannot always be detailed to clinical clerks or assistants. These difficulties can in large measure be overcome if stenographic notes are made at the time of investigation. Further, a recent graduate will find useful application of his phonographic ability in the reporting of lectures or similar work, for which he is likely to have time during at least the early part of his professional career. Good medical stenographers do not exist in excessive numbers, and the remuneration may help tide over a critical period.

The distinguished neurologist, Dr. Gowers, himself an adept and enthusiastic stenographer, has long insisted on the wisdom of medical men educating themselves in phonography. With the aid of others he has organized a Society of Medical Stenographers, which publishes monthly (except during April, August, and September) *The Phonographic Record of Clinical Teaching and Medical Science*, containing stenographic reports of lectures by medical men, and other articles and matters of interest. It is proposed also to issue from time to time supplements containing matters of combined medical and phonographic interest. A list of more than 1800 vocalized outlines of medical terms is in course of preparation for distribution among the members of the society. The *Record* is edited by Drs. Gowers and Taylor. The annual subscription is, for medical men, five shillings; for medical students, three shillings. Dr. Neil, Warneford Asylum, Oxford, Eng., is the honorary secretary.

The Reprint Advertisement.—In partisan politics one of the most disheartening things is not that men can stoop to such scoundrelism as they do, but that the humbuggery is so evident. It depresses one to find, first, that a man can try to play so poor a trick, and play it so poorly; and, second, that there is any considerable number of one's fellow-citizens so stupid as to be fooled by such evident hypocrisy and nonsense. In medicine we have the same causes for wonder. As one takes note, for example, of the tricks of the advertising specialist, he is shocked to think that there are so many *confrères* who can be hoodwinked by such specious buffoonery. There must be many who are taken in, or it would not pay to do it so much.

We have before us as we write a pamphlet purporting to be the reprint of an article published first in a medical journal. The first page is filled with a portrait of the author of the pamphlet, under which appears the name with many and long degrees and titles of the professor, his addresses, office hours, etc. The atrocities of the illustrations, artistically and anatomically, make us wonder if it is not a mistake that even a single copy of the reprint should have found its way into professional hands. Was it not meant for distribution among possible patients rather than among physicians?

Even the Carpet-cleaners are After Us!—Physicians of a large city are receiving the following letter:

> Dear Sir: We beg to call your attention to the enclosed card. Knowing that you are called upon when sickness enters a home, we would consider it a great favor, if, whenever possible, you would mention our name and address to the person in charge of the house, stating that after sickness or death feather beds, bolsters, pillows, and hair mattresses are often soiled, and therefore prejudicial to good health, and the same should be renovated and disinfected. We do this thoroughly by our steam process, removing all impurities, etc., and making the articles equal to new.
>
> On all orders we receive through you, we will gladly allow you 25 per cent. commission, which shall be remitted to you promptly, or accounted for on any work of your own.
>
> Trusting you will consider this favorably we are,
>
> Yours respectfully, ———

Dr. William T. G. Morton.—Among the fifty-three names which are to be inscribed as a roll of honor in the dome of the new chamber of the House of Representatives, in the State House, at Boston, and each of which is intended either to mark an epoch or to designate a man who has influenced the course of events, we note that three were borne by members of our profession. Only one of these three, however, was chosen on account of eminent services to medicine. The name so dignified is that of Dr. William T. G. Morton, who was the prime mover of the experiments which led to the establishment of anesthesia by sulphuric ether as a matter of practice. Of the priceless value of this boon to the human race, it would be superfluous at this day to speak. That the name of the man through whom it came should be held in lasting honor, and given a high place in the list of benefactors to mankind, is but just and right.

The Montefiore Country Home for Consumptives is the name of a new non-sectarian institution to be established in New York for the gratuitous treatment of the tuberculous poor. Mr. J. H. Schiff and Mr. L. G. Bloomindale have each contributed $25,000 for the purpose.

REVIEWS.

A TEXT-BOOK OF THE PHYSIOLOGICAL CHEMISTRY OF THE ANIMAL BODY, INCLUDING AN ACCOUNT OF THE CHEMICAL CHANGES OCCURRING IN DISEASE. By ARTHUR GAMGEE, M.D., F.R.S.
VOL. II. THE PHYSIOLOGICAL CHEMISTRY OF DIGESTION. Pp. 528. London: Macmillan & Co., 1894.

THIS volume forms, like its predecessor, which appeared in 1880, an independent and complete treatise. The first volume, now undergoing revision, was devoted to the physiologic chemistry of the elementary tissues of the animal body. The present, of more practical interest to the laboratory-worker and to the clinician, deals with the physiologic chemistry of digestion, and forms a work based, as the author states, on an original study of the whole literature of the subject, and is intended as "an accurate guide to the advanced student and the original worker, both in the study and in the laboratory."

Dr. Gamgee writes in an attractive style, approaching his subject from the standpoint both of a physiologist and a chemist. He discusses at length not only the physiology of the digestive processes occurring in the body, but also the pathology of jaundice, the pharmacology of the icterogenic poisons and of cholagogues, and the structure and formation of gall-stones. The important intestinal processes resulting from the activities of microörganisms are not omitted, and a description of the formed enzymes, some seven individual species, normally present in the intestines, is included. Stress is especially laid on the little-known fact that, as a result of the same bacterial action, so great is the quantity of organic acids, chiefly lactic, formed in the bowel, the intestinal secretions, from pylorus to cecum, are practically never alkaline, excepting those of the duodenum at the time the pancreatic juice is being most actively secreted. He points out that it is through the agency of these same microörganisms that the bile indirectly owes its antiseptic virtues; the lactic and other acids so formed from the carbo-hydrates, after neutralization of sodium carbonate secreted by the mucous membrane during digestion, liberate from inactive combination a certain amount of bile-acids, so powerful in inhibiting putrefactive intestinal processes. Concerning gall-stone formation, he points out, according to the view of Naunyn, that these are probably the result of an infectious process, and occur through the migration of bacteria from the duodenum, exerting a pathogenic action on the mucous membrane of the bile-passages, this same migration being facilitated by sluggishness of biliary flow. It is shown that the increase of the frequency of gall-stones in the aged is thus indirectly the result of diminution of respiratory activity leading to stagnation of bile in the ducts. He also cites the other important factor, that of atrophy of the unstriated muscular fibers existing in the walls of the bile-passages, this last condition especially leading to formation of concretions without symptoms of colic.

The interesting fact, yet not generally known, is also fully noted that so-called hematogenous or non-obstructive jaundice does not exist, it now being settled that jaundice is always due to obstruction to the normal efflux of already-formed bile. The biliary acids and coloring-matter are both formed in the liver, so that extirpation of that viscus in animals does not occasion jaundice, even under conditions that might be supposed otherwise to produce the falsely called hematogenous form. It is, moreover, proved that by ligation of the thoracic duct, as well as of the common bile-duct, no jaundice ever results, so that it is only through the lymphatics that the biliary elements can reach the blood.

Although the large part of the work devoted to a consideration of the physiology of gastric digestion leaves nothing to be desired, the author in his directions for practical laboratory-work in this line of importance to the clinician displays a lamentable ignorance of modern manipulative clinical and chemic methods, an ignorance so common with the English, who have so totally neglected the important field of applied gastric chemistry. Whatever may be said concerning the utility of a knowledge of the newer methods from a therapeutic standpoint, our debt to them as an aid in diagnosis is undoubted. Dr. Gamgee does not question either, and it is for this reason the more surprising that his book does not show evidence of his having done some practical work in this field so ripe for research. His description of methods for clinical laboratory-work in the body of the book are antiquated in the extreme, both in the mode of examination of the stomach-contents and that for obtaining the same. If the barbarous and antique aspirating method for the latter, illustrated on page 165, is popular in England, as one is led to suppose, there is slight wonder that a feeling there exists against the employment of the stomach-tube save as a *dernier ressort.* As curious a method is illustrated for lavage on page 166, and in his description of Ewald's trial-meal he speaks of a *well-buttered* (!) roll.

In a consideration of gastric digestion in special diseases Dr. Gamgee clings to the old English method of symptomatic nomenclature, and minutely describes a *flatulent*, an *acid*, and an *atonic dyspepsia*, as if they were special morbid entities, wholly separated from acute and chronic gastric catarrh, ulcer, atrophy, and carcinoma of the stomach, all separately noted. No mention is made of the neuroses of the stomach. These forms of dyspepsia, from the symptomatology cited, should clearly fall into some groups of these diseases. He is not up to date in these matters, as other unquoted passages plainly show. In the appendix Dr. Gamgee partly atones for the deficiency in one of these particulars. Here, in a few pages, the data for which he draws from the recent work of Martius and Lüttke, he gives in epitome an account of more approved methods of procedure in the examination of the stomach-contents.

Apart from the weakness in these particulars, the work is a splendid achievement, and will long live, with its sister volume, as an enduring monument to the fame of the distinguished author.

DISEASES OF THE EAR. A Text-book for Practitioners and Students of Medicine. By EDWARD BRADFORD DENCH, Ph. B., M.D., Professor of Diseases of the Ear in the Bellevue Hospital Medical College, etc. Pp. 645. New York: D. Appleton & Co., 1894.

THIS is a very handsome book, but it is too big. There are some glaring defects in the anatomic illustrations, though most of them are excellent. Why are two ossicles represented as lying loose in the tympanic cavity, as in Figs. 5, 3? This is grossly misleading to the beginner. Plates I, II, III, and IV, of the vascular and nervous supply of the middle and internal ears, are especially good.

The pages on physical examination of the ear are, for the most part, good; but we are surprised to find the position of the light shifted from the surgeon's right to his left, as on page 87. His left arm would thus be likely to get between the light and the mirror. Catheterization of the Eustachian tube is marred by the introduction of the old, impracticable, and septic catheters of Noyes and Pomeroy, and also by the suggestion to cocainize the nose before using the catheter. This is wholly unnecessary if the operator understands how to catheterize the Eustachian tube. If he does, he will not hurt the patient. Force should never be exerted, either with or without anesthesia.

Local abstraction of blood and incisions do no good in furunculosis of the ear. As they provide new furrows for the growth of septic germs, they do positive harm. So in acute otitis media, local abstraction of blood never aborts the inflammation; if dry heat will not relieve the congestion and pain, paracentesis is the only means of relief to pain and escape of the exudation.

Under middle-ear operations the author avails himself largely of the experience of other American aurists, even using their terms, like "stapedectomy" (Blake and Jack), without mentioning their names. He is the youngest worker among many older ones, in this field, in this country; but from his text one might justly infer that he is the only one. Buck and J. O. Green, who have labored for twenty years in mastoid surgery, are not even mentioned in this connection. Surely this young author should not withhold what is due these observers.

A Manual of Diseases of the Ear for the Use of Students and Practitioners of Medicine. By Albert H. Buck, M.D., Clinical Professor of Diseases of the Ear, College of Physicians and Surgeons; Columbia College, New York; Consulting Aural Surgeon, New York Eye and Ear Infirmary, and the Presbyterian Hospital. Second revised edition. One volume, post octavo, 467 pages, illustrated, with blank memoranda pages at the back. New York: William Wood & Co., 1895.

This book is commendably compact and of very reasonable price. It sets forth the general consensus of opinion as to the treatment of ear-diseases down to within about ten years, since which time our knowledge of bacteriology has gradually modified the views of many aurists concerning the treatment of ear-diseases, especially of acute otitis media. In this malady, if dry heat, or in some cases, if the mechanical pressure upon the membrana can be endured, warm instillations of carbolic-acid water (1.50 per cent. to 2 per cent.), cannot abort the process and ease the pain in five or six hours, spontaneous rupture must not be awaited, but paracentesis of the drum-membrane performed. Immediately upon the appearance of a discharge, either after paracentesis or a spontaneous rupture of the membrana tympani, the ear should be drained by placing in the auditory canal a narrow strip of iodoform-gauze or carbolic-acid-gauze, the meatus gently stopped with a little iodoform-cotton, and the ear let alone for twelve hours, or even longer, if the discharge is not copious. It is a mistake to syringe the ear, to drop anything into it, or to inflate the tympanum as soon as an ear begins to run, for fear of secondary infection of the middle ear. Drainage of exudation by way of the auditory canal is rather to be favored, for thereby the pathogenic organisms are carried from the middle ear. If the original acute otitis media is properly treated, no mastoid complications can ensue. The mastoid cavity has the ability to empty itself syphonically through the auditory canal, as it does probably in every case of acute otitis media in which the escape of the exudation is not impeded and in which no secondary infection is artificially set up.

The chapter on "Analysis of Symptoms" is a new one and of value to the general practitioner. The author is at home in the chapter on mastoid disease and operations. He rejects all intra-tympanic operations in chronic catarrh of the middle ear, but regards them as indicated to some extent in chronic purulent otitis media. But the ideal book, of not more than 300 pages, for "students and practitioners of medicine," has yet to be written. There are few things these busy men can learn of otology, and still fewer they can do for diseased ears. They could be told, however, that little, and also what to avoid even attempting to do, in much fewer words than this book, most valuable to a specialist, contains.

Text-book of Nervous Diseases, Being a Compendium for the Use of Students and Practitioners of Medicine. By Charles L. Dana, M.D. Third edition. With 210 illustrations. New York: William Wood & Co., 1894.

A work that has gone through three editions has received the stamp of professional approval, and any criticism thereon must be in the way of suggestion for further improvement rather than a judgment adverse to the merit of the work. Dr. Dana's style of writing is clear, and if he is somewhat more dogmatic than the present certainties of science justify, it is a fault to be excused in a teacher, and, perhaps, rendered necessary by the great condensation to which he has submitted the complex and difficult subjects of which he treats.

We are pleased to note that the author gives his adherence to that theory of exophthalmic goiter which regards the disease as an ataxia, or, to use the author's own language, a neurasthenic condition of the vasomotor centers and the visceral nerves. The attention which he devotes to hydrotherapy and his just estimate of the value of electricity are useful features of the book. The author speaks favorably, perhaps more so than the facts quite warrant, of the use of extracts of brain and nervous tissues in treatment. We must record our emphatic disapproval of the proposition to use tuberculin in the diagnosis of tuberculous meningitis. Some of the illustrations are useful; others are either so poorly executed or so overcrowded as to be rather more confusing than helpful. On the whole, however, the book is the best compendious work upon its subject in the English language of which we have knowledge, and we can once more commend it to our readers.

SYLLABUS OF LECTURES ON HUMAN EMBRYOLOGY: AN INTRODUCTION TO THE STUDY OF OBSTETRICS AND GYNECOLOGY. FOR MEDICAL STUDENTS AND PRACTITIONERS. WITH A GLOSSARY OF EMBRYOLOGICAL TERMS. By WALTER PORTER MANTON, M.D., Professor of Clinical Gynecology and Lecturer on Obstetrics in the Detroit College of Medicine; Fellow of the Royal Microscopical Society, of the British Zoological Society, of the American Microscopical Society, etc. Illustrated with seventy outline drawings and photo-engravings. 12mo, cloth, 126 pages, interleaved. Philadelphia: The F. A. Davis Co., 1895.

IN the preparation of this syllabus Dr. Manton has drawn not only upon the last editions of all of the standard works upon comparative and human anatomy, embryology, physiology, and obstetrics, but he has also consulted the recent current medical literature upon the subject, including the *Journal of the Royal Microscopical Society, the Zeitschrift für Geburtshülfe und Gynäkologie*, and the *Archiv für Gynäkologie.* The diagrams and drawings are largely original and are taken in part from specimens in the author's private collection. The book is interleaved for additional note-taking, and is made to meet the student's needs. The material is concisely and accurately presented, and as a syllabus the book merits honorable mention, especially from an obstetric point of view.

CORRESPONDENCE.

AN UNUSUAL SKIN-DISEASE.

To the Editor of THE MEDICAL NEWS,

SIR: H. G. R., male, single, aged thirty years, was by occupation a contractor and builder. Eight years ago, after skating continuously for ten hours, dressed in tights, he became quite warm, and walked from the rink to his hotel, a distance of six squares, dressed in his thin, close-fitting attire. From this exposure he became very much chilled, and immediately afterward, while changing his clothing, he was seized with an intense itching or irritation of the skin. This irritation began on the legs and thighs, but gradually extended all over the body, except his feet and scalp, which have never itched. Since that time he has been variously and vigorously treated, often with no relief whatever; but during this time, since the disorder first made its appearance, he has been entirely relieved for a period of twelve months, though the trouble would eventually return, and with each recurrence the irritation would be as intense and general as in former attacks. Upon examination of the skin I find the condition one of desquamation; as he exhibits the affected parts, beneath, on the floor, it appears as though there had been a light coat of fine meal dusted. On close inspection of the skin around the roots of the hair is to be seen a small scarlet or delicate pinkish eruption about the hair-follicles; the intervening skin is cracked or fissured, and is soon cast off. The discolored points are about half as large as the head of an ordinary dressing-pin. The itching is irregular, more intense at times than others. Sometimes it is worse at night; at other times it annoys him more in the daytime, and is more intolerable during cool weather than warm, for he states that during the summer or warm weather when at work and perspiring he is but little annoyed till he cools off, when it begins again. He states that following the periods that he was free from it, each return would follow some exposure to cold air. Accompanying this irritation are attacks of cold, chilly sensations, beginning at or near the coccyx and gradually increasing in extent and severity to one or both lower extremities. He says that when the itching is worse on the legs he can often get relief or render it unnoticeable by crossing his legs, with the worst one on top, and engage it in a swinging motion. His appetite is good, also his digestion. He sleeps well also. Occasionally, however, he is prevented from sleeping for an hour or two after retiring. He has no bad or vicious habits, never drank intoxicants of any kind; smokes and chews tobacco but little, and never had a venereal disorder.

What is the nature of this disorder? I should like to hear from experts on skin-disorders or upon nervous affections, according as the case may be classified.

Most respectfully, A. B. BAIRD.

OKLAHOMA CITY, O. T.

DEATH FROM "BABY DROPS."

To the Editor of THE MEDICAL NEWS,

SIR: I was recently called to see a four-months old infant to which a fatal dose of "baby drops" was given about two hours before. The following are the facts in the case:

The mother was in the habit of administering daily the required amount of "Lemberger's Magnesia Infant Drops," manufactured at Lebanon, Pa. On the previous day she had drained the bottle. Her druggist was out of Lemberger's, and he therefore influenced her to take "Mrs. Winslow's Soothing Syrup." Of this the label-dose was given without the desired effect following. A few hours later she concluded to rinse the sediment from the Lemberger bottle; and accordingly gave the entire quantity to the infant. In a very short time, indeed before it could finish nursing, it was sound asleep.

Its peculiar respiration and the strange appearance of the eyes soon caused alarm. When I first saw it the pupils were contracted to the size of a pin-point, and the respirations were stertorous, irregular, and greatly reduced in number. The child could be aroused with great difficulty, after which it relapsed almost immediately into a deep stupor. It could not swallow. It had been healthy from birth.

In view of the fact that fully two hours had elapsed since the toxic dose was given I decided to resort to atropin hypodermically, faradic electricity to the diaphragm, and cold water to the face. In this way life was sustained for sixteen hours. After twelve hours the symptoms of narcosis became associated with those of increasing depression. Paralysis of the centers of respiration was almost complete. In the height of the effect the respirations were reduced to two or three per minute, the longest intervals being thirty and even forty seconds. I used tentatively small quantities of alcohol injected, but all to be finally disappointed. The infant died a victim to the inhuman practice of drugging well babies to sleep, a custom as vicious as it is common.

J. R. JOHNS.

DENVER, PA.

A METHOD OF TREATING ALCOHOLISM.

To the Editor of The Medical News,

Sir: In reply to the request contained in a recent number of The Medical News for formulæ antidotal to the craving for alcoholic liquors, I would say that the great physiologic antagonism between atropin and alcohol does not seem as generally understood as it might be. If very small doses (less than $\frac{1}{100}$ gr.) of atropin be administered hypodermically three or four times daily to a victim of the liquor-habit, it will produce a great distaste for alcoholic liquors in from one to five days. Whiskey will become repellant both as regards sight and odor, and will have a most intolerable taste—as one man expressed it, like turpentine or benzine. If, under these circumstances, drinking is still attempted, it produces nausea and vomiting, without the addition of apomorphin or any substance whatever to the liquor. The drinker will almost invariably be turned completely against liquors in less than five days.

If this plan of treatment is pursued for its strong psychic effect, and if at the same time gentian, hydrastis, cinchona, strychnin, or other stomachic and general tonic is administered, with what other incidental remedies may be needed, it will constitute a very successful treatment of the liquor-habit, and when systematically carried out for three or four weeks will be very lasting in its effects. This curious antagonism between atropin and alcoholic liquors is the basis of some of the notorious "gold-cures" of the present day, and is a fact that should be used to better advantage by the regular profession in its treatment of the drink-craze. It should contraindicate or lead to caution in the administration of alcoholic stimulants to any patient already under the influence of atropin, hyoscyamin, or other mydriatic drug. In such cases it is likely to cause a foul, coated tongue, nausea, vomiting, insomnia, delirium, and possibly insanity.

C. C. Carter.

243 East Long Street, Columbus, O.

ON THE EARLY RECOGNITION OF CARCINOMA OF THE STOMACH.

To the Editor of The Medical News,

Sir: May I ask that you will permit me to add a brief postscript to my paper of February 16th, "On the Early Recognition of Carcinoma of the Stomach," that I may record the result of the last examination of the stomach-contents in the case mentioned on page 171, in which, although continuous improvement under treatment had occurred, no return of free HCl in the stomach-contents was evident at the time the paper was written (January 16th). A recent examination, made one month later, under the same conditions (the gastric contents removed one-and-a-half hours after Boas' gruel breakfast) showed a decided change for the better, well indicating the steady improvement that is occurring. Amount withdrawn 60 c.c.; well-solved, bile-stained. Congo paper blued and sharp Günzburg's reaction (demonstrating now, for the first time, the presence of free HCl). Total acidity: 40; no lactic acid; free and bound HCl: 0.06 per cent. Examination for pepsin not made, that for lab-ferment showed decided presence.

As concerns the diagnostic value of the presence of lactic acid, perhaps I did not lay sufficient stress in my paper on the fact that in the rare cases of carcinoma in which free HCl persists, despite the neoplasm, it is not to be expected that lactic acid will be found, save, perhaps in traces, the latter depending upon the percentage of free HCl present. As regards the negative value of the test, as recorded in the case related, it can, of course, only be regarded of utility in those in which, with symptoms simulating malignant disease, there also exist delayed propulsion and persistent absence of free HCl.

Very truly yours,

D. D. Stewart.

2620 N. Fifth St., Philadelphia.

NEWS ITEMS.

A Private Hospital for Contagious Diseases in New York.—A wealthy lady has offered the Board of Health of New York $25,000 to aid in the establishment of a private hospital for the treatment of contagious diseases, on condition that the money shall be used for no other purpose, that no part of it shall be applied to the improvement of any existing institution, and that the management shall be in the hands of the Board of Health and of a board of trustees appointed by the subscribers to the fund raised for the erection of the hospital.

Extra-mural Instruction in Medicine at Harvard.—The Faculty of the Medical Department of Harvard University has authorized approved physicians having the necessary facilities and desiring to teach its medical students to announce their courses in the Medical School.

The Sale of Patent Medicines in New York.—A bill has been introduced into the New York State Legislature giving the Board of Health the power to regulate the sale of patent medicines.

Dr. A. L. Benedict, of Buffalo, has been awarded the Merritt H. Cash prize of $100, by the Medical Society of New York, for an essay entitled "Auscultatory Percussion and Allied Methods of Physical Diagnosis."

Dr. John Whitaker Hulke, President of the Royal College of Surgeons of England and Senior Sugeon to Middlesex Hospital, died on February 19th, at the age of sixty-five years.

Four Years' Course at the Yale Medical School.—The Faculty of the Medical Department of Yale University has decided to extend the course of study from three to four years.

Dujardin-Beaumetz, the distinguished French therapeutist and clinician, died on February 15th, at Nice, at the age of sixty-one years.

Dr. Roswell Park, of Buffalo, was recently elected President of the Medical Society of the State of New York.

Meetings of State and National Medical Societies:

	Meets.	Next meeting.
American Academy of Medicine.	May 4–6, 1895	Baltimore.
American Association of Genito-urinary Surgeons.	May 28–31, 1895	Niagara Falls, N. Y.
American Dermatological Association.	Sept. 17, 1895	Montreal, Can.
American Electro-Therapeutic Association.	Sept. 3, 1895	Toronto, Can.
American Gynecological Society.	May 28, 1895	Washington, D. C.
American Laryngological Association.	May, 1895	Rochester, N. Y.
American Medical Association.	May 7, 1895	Baltimore.
American Neurological Association.	June 5–7, 1895	Boston, Mass.
American Ophthalmological Society.	July 24, 1895	New London, Conn.
American Orthopedic Association.	Sept. 19–21, 1895	Chicago, Ill.
American Pediatric Society.	May 28, 1895	Hot Springs, Va.
Arkansas Medical Society.	May 1, 1895	Little Rock, Ark.
Army and Navy Medical Association.	May, 1895	Decatur, Ill.
Association of American Physicians.	May 28–31, 1895	Washington, D. C.
Association of Military Surgeons of the United States.	May 21–23, 1895	Buffalo, N. Y.
British Medical Association.	July 30–Aug. 2, 1895	London, England.
Canadian Medical Association.	Aug. 28–30, 1895	Kingston, Ont.
Colorado State Medical Society.	June 18–20, 1895	Denver, Col.
Connecticut Medical Society.	May 1, 1895	New Haven, Conn
Florida State Medical Society.	April 16, 1895	Gainesville, Fla.
Idaho State Medical Society.	Sept. 9–11, 1895	Boise City, Id.
Illinois State Medical Society	May 14–16, 1895	Springfield, Ill.
International Congress of Hydrobalneotherapy.	1895	Ostend.
International Medical Congress.	August, 1896	Moscow, Russia.
Iowa State Medical Society.	April 17, 1895	Creston, Ia.
Kansas State Medical Society.	May, 1895	Topeka, Kans.
Kentucky State Medical Society.	June 12–14 1895	Harrodsburg, Ky.
Louisiana State Medical Society.	May 7, 1895	New Orleans, La.
Maine Medical Association.	June 5, 1895	Portland, Me.
Massachusetts Medical Society.	June 11, 12, 1895	Boston, Mass.
Medical and Chirurgical Faculty of Maryland.	April 23, 1895	Baltimore, Md.
Medical Association of the State of Alabama.	April 16–19, 1895	Mobile, Ala.
Medical Association, District of Columbia.	April 2, 1895	Washington, D. C.
Medical Association of Georgia.	April 18–20, 1895	Savannah, Ga.
Medical Association of Montana.	April, 1895	Anaconda, Mont.
Medical Society of the State of California.	April 16, 1895	San Francisco, Cal.
Medical Society of Delaware.	June 11, 1895	Wilmington, Del.
Medical Society of the Missouri Valley.	March 21, 1895	Sioux City, Ia.
Medical Society of the State of New Jersey.	June 25, 26, 1895	Cape May, N. J.
Medical Society of the State of North Carolina.	May 14–16, 1895	Goldsboro', N. C.
Medical Society of the State of Pennsylvania.	May 21, 1895	Chambersburg, Pa.
Medical Society of the State of Tennessee.	April 9, 1895	Nashville, Tenn.
Medical Society of Virginia.	October	Wytheville, Va.
Medical Society of West Virginia.	July, 1895	Elkins, W. Va.
Michigan State Medical Society.	June 4, 1895	Bay City, Mich.
Mississippi State Medical Association.	April 10, 1895	Jackson, Miss.
Mississippi Valley Medical Association.	September	Detroit, Mich.
Missouri State Medical Association.	May 21, 1895	Hannibal, Mo.
Nebraska State Medical Society.	May, 1895	Grand Island, Neb.
New Hampshire Medical Society.	May 30, 31, 1895	Concord, N.H.
New Mexico Medical Society.	July 10, 1895	Las Vegas, N. M.
New York State Medical Association.	October 15–17	New York City
Ohio State Medical Society.	May 15–17, 1895	Columbus, O.
Ontario Medical Association.	June 5–6, 1895	Toronto, Ont.
Oregon State Medical Society	June, 1895	Portland, Ore.
Rhode Island Medical Society.	June 6, 1895	Providence, R. I.
South Carolina Medical Association.	April 24, 1895	Columbia, S.C.
Texas State Medical Society.	April 23, 1895	Dallas, Tex.
Tri-State Medical Society.	April 2–4, 1895	St. Louis, Mo.
Vermont State Medical Society.	October 10, 11	Burlington, Vt.
Washington State Medical Society.	May, 1895	Seatle, Wash.
Wisconsin State Medical Society	June 5–7, 1895	West Superior, Wis.

BOOKS AND PAMPHLETS RECEIVED.

Cauterization of the Nares, and Accidents that May Follow. By E. Fletcher Ingals, M.D. Pamphlet. Chicago, 1894.

A Contribution to the History of Medicine in Southern California. By Cephas L. Bard, M.D. Pamphlet. Ventura, Cal., 1894.

Report of the Ninth Annual Meeting of the Association of Executive Health Officers of Ontario, held at Chatham, Ontario, August, 1894. Toronto: Warwick Bros. & Rutter, 1894.

Military Medicine, Surgery, and Hygiene. Notes on the Introduction of the Tent Field Hospital in War. By Col. B. J. D. Irwin, M.D., Assistant Surgeon-General U. S. Army. Reprinted from the Proceedings of the Association of Military Surgeons of the United States.

A Series of Interesting Cases in the Service of Dr. Horace Tracy Hanks at the Woman's Hospital. By John H. Rishmiller, M.D. Reprinted from the American Gynecological and Obstetrical Journal, 1894.

Thirty-third Year of the Charity Hospital of the City of Philadelphia. Report of the Board of Trustees, 1893–94. Philadelphia: George B. Cole & Brother, 1894.

Rupture of the Drum-Head by Blows Upon the Ear. By Robert Barclay, A.M., M.D. Reprinted from the International Clinics, Vol. II. Fourth Series.

Zur Chininbehandlung des Keuchhustens. Von Dr. P. Baron. Sonderabdruck aus der Berliner klin. Wochenschr., 1893, No. 48.

Eleventh Annual Report of the Committee on Lunacy of the Board of Public Charities of the Commonwealth of Pennsylvania, September 30, 1893. Clarence M. Busch, State Printer of Pennsylvania, 1894.

Twenty-six Cases of Intubation of the Larynx. By Frank L. Day, M.D. Reprinted from the Boston Medical and Surgical Journal, 1894.

Treasury Department, Interstate Quarantine Regulations of the United States, September 27, 1894. Washington: Government Printing Office, 1894.

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ORIGINAL ARTICLES.

WRONG REFERENCE OF SENSATIONS OF PAIN.

BY S. WEIR MITCHELL, M.D.,
OF PHILADELPHIA.

It occasionally happens that in the large clinical material seen at the Orthopedic Hospital we meet with cases that are hardly capable of nosologic classification, and yet are not without their lessons. Here, as an example, is a case so unusual that rarely have I seen one like it or even analogous to it. It is a very simple story:

T. M. was sent first to my clinic at the Infirmary for Nervous Diseases by Dr. J. H. McKee, on December 7, 1894. She was sixty-two years of age, born in Pennsylvania, and married. Her mother died at the age of ninety-five, and her father at seventy-three from "cancer." Two sisters and three brothers are well. One sister died of "florid tuberculosis" and one brother of "spotted fever." The woman has borne three sons; two are well, and one is asthmatic. She takes two cups of strong tea and two of strong coffee daily, and beer moderately. The menopause occurred between forty and forty-five years of age. She has had pneumonia twice, once at fifty-two and again at fifty-seven years of age.

On November 25, 1894, thirteen days ago, while blacking a stove, she let a heavy stove plate fall on the *right* foot, striking the toes. The great toe and the adjacent one were injured, and were discolored from the bruising. A line of blackish discoloration is still present under the nail of the second toe. But there is no swelling or redness, though some pain still persists.

Immediately on the reception of the injury she felt acute pain on the antero-internal aspect of the left leg (the uninjured side) at the junction of the upper and middle thirds. This pain extended downward into the foot and upward into the thigh. It was of a burning character, fairly constant, but worse at night. At present the appetite is good and improving, the tongue is clean, there is no vomiting, but the woman has an occasional headache attended with nausea.

The heart's action is rhythmic, the sounds distinct. The vascular tension is moderately increased. The radial and temporal arteries are tortuous and resistant. There is slight vertigo, no dyspnea, and no swelling of the feet. There is an increased frequency of micturition, both nocturnal and diurnal. The urine contains no albumin or sugar and has a specific gravity of 1022.

The woman has lost flesh in the last two weeks. She has not had chills, fever, or sweats. She sleeps poorly and worse since the accident. Memory is good and hearing is fairly good, but the eyesight is poor, although improved by glasses. The station is a little unsteady. The knee-jerks are active, and sensation is apparently normal. There is no history of traumatism of the left leg. But the left tibia is now more sensitive than the right. It is particularly tender in the middle third, on the inner and outer margins. The left leg is also more florid and the temperature feels higher. There is no inflammatory or other deposit present. An electric examination of the tibial group of muscles shows a slight quantitative decrease to the faradic current. There is no galvanic change.

On December 21, 1894, the woman was better, and continuance of the electricity was ordered. On January 8, 1895, constant gain was reported.

I have personally gone over the case with extreme care, and see no cause to disbelieve the statement made by the patient. She declares that, having had a heavy weight fall on the right foot, there was at once a pain in the left shin, so sharp as to distract her attention from the quite severe injury received by the opposite member. Also she declares that the referred pain has now, for three weeks, survived that of the part hurt. The ache in the front of the left leg is becoming better since the use of galvanism and frictions.

This case, unusual as it is, seems not to be unique. In fact, I came yesterday, in Sharkey on *Epilepsy*, upon a case in which the pain caused by an injection for gonorrhea was felt as an acute pain on top of the head. A careful search through the books might enable us to find like instances. So far, however, Dr. Burr has not been fortunate in this search, probably because the cases are nowhere indexed as wrongly referred sensations. I myself recall two of which I have personal knowledge. One was that of a man who, having a felon on the right thumb, had, until it was relieved, severe pain in the opposite thumb. The reference thus was to both thumbs, and not from a foot to a non-symmetric part of the opposite limb. In another case, in which an omnibus-window was let fall on a finger on which was a felon, there was with the pain of the finger a brief but violent pain of the face and neck of the other side.

I have also some remembrance of having many times heard during the great Civil War, from men shot, statements as to their having felt the wound as pain in some remote part of the body. In the notes of that time made by Morehouse, W. W. Keen, or by me, I find, in fact, interesting examples of the kind of referred pain seen in this woman.

One was the case of Captain now Admiral Strembel, who, being shot through the right side of the neck, had with reflex paralysis of the left arm and also pain in that unwounded member. Other instances are as follows:

CASE II, of Circular No. VI, 1864.—A shell-wound of one leg (right) at once gave rise to burning pain in both feet and in the right arm and right pectoral region.

CASE IV.—A wound of the testicle was referred to the back, where alone was any pain felt.

CASE V.—A shell-wound of the outer side of the left thigh with immediate reference of pain to the same area on both thighs. The man thought, indeed, that he was shot through both thighs. Other of our cases exhibited similar phenomena of cross or symmetric or non-symmetric reference of the pain of a wound.

CASE IV, in Hutchinson's series, p. 313, is one of injury of the median and ulnar nerves which gave rise to pain in the opposite hand. Pirogoff has a report of the same form of cross-reference from a wound. Such false reports as to the seat of a pain-cause are not rare as regards the branches of a single nerve. A familiar example is seen or felt in the widely referred pain from an exposed dental nerve.

Our present case does not stand alone. Nevertheless, instances of cross-reference are rare enough to make it worth while to call them to your attention. This woman's case serves to remind me of other facts of like nature, but by no means identical.

One of my older friends, now dead, a naturalist of great distinction, had on one leg a small mole. If this was roughly rubbed or pinched, he had at once a sharp pain in his chin. More interesting are the cases in which after a nerve-section, or late in a neuritis, there is a reference centrad of a touch at some lower point. I long ago described this class of facts, and not very successfully commented upon their cause. In a book on remote histories of nerve-lesions, by John K. Mitchell, now in press, there are many illustrations of this form of referred touch-sense. He has also still more curious cases of sensations referred peripherad or to a remote region.

The unusualness of the present case lies in the continuance of pain in the remote region long after the seat of the originating cause had ceased to be painful.

I do not think that we are as yet prepared to reason upon some of these symptoms. As to what is to be said or has been, I refer the curious to the book I have just now mentioned. One can, in a measure, comprehend that a violent stimulus to a sensory nerve may be switched off on to other nerve-tracts or centers, as if it were the escape of an over-charge; but, even if we hazard such an hypothesis, it is still difficult to explain the persistency of certain of these transferred impressions, for it is a law of the receiving centers for painful impressions that when the cause of the pain ceases to be active the feeling of being hurt ends. But in some of these examples of false reference of pain there must have been made in a center some more or less permanent change that continuously represents the effect to which any pain-making agency usually gives rise.

THE EFFECTS OF TOBACCO-SMOKING IN MODERATION AS PREVENTIVE OF PULMONARY DISEASE.

BY CHARLES J. MONTGOMERY, B.S., M.D.,
OF AUGUSTA, GA.

EVERY now and then an article appears in a popular magazine or newspaper setting forth the evils resulting from the use of tobacco. As this indiscriminate condemnation of a luxury enjoyed by thousands has little or no effect, it is not often that anyone takes the trouble to say a word in its favor. That the excessive use of tobacco produces at times grave results no one will deny. This is also true of the excessive consumption of certain ordinarily wholesome articles of diet, and is especially true of many valuable medicines. But that these articles of food and these medicines should for that reason be condemned as altogether without virtue would indeed be unreasonable, yet no more so than to condemn the smoking of an occasional cigar, if it can be shown that this is not only not injurious, but in certain cases actually beneficial.

It is not my purpose to present indisputable proof that smoking is at times beneficial, but merely to offer a few suggestive thoughts and to present reasons tending to show the high degree of probability of benefit, especially in relation to certain pulmonary affections. Unfortunately this proof must remain to be demonstrated by future observers in the field of experimental therapeutics and bacteriology, for as yet too few experiments and observations have been made on this subject to enable one to speak with any degree of certainty. After a careful study of the literature on the subject of tobacco I find that there is but little known of the action of its smoke, it being apparently assumed that when we are told the physiologic effects of tobacco or its alkaloid, nicotin, when taken into the stomach and circulation of a man or lower animal we should be satisfied. Considering the fact, however, that one who smokes tobacco takes but a trace of nicotin into his stomach, while the smoke is filling his mouth and entering his lungs, it seems but reasonable to presume that the effects produced, whether for good or evil, are dependent almost wholly on the effects of the smoke.

For fear of misapprehension, I will here state that of those who smoke cigars and pipes there are but very few in whom the smoke drawn into the mouth is directly inhaled except in very small amount, but it chiefly enters the lungs subsequently on account of the air of the room being heavily laden with smoke. The majority of cigaret-smokers, however, usually inhale the smoke directly into the lungs before blowing it out of the mouth. Tobacco-smoke contains only the smallest trace of nicotin, but does hold several volatile bodies, mainly pyridin, picolin, lutidin, and collidin, which are said to have "somewhat the same action as nicotin, but less severe." It also contains hydrocyanic acid, hydrogen sulphid, phenol, and creosote. Phenol and creosote are invaluable in medicine for their antiseptic and bactericidal properties, and seem in certain conditions to exert a most beneficial action when applied locally. Hydrogen sulphid was at one time extensively used in the treatment of pulmonary troubles, and while this treatment is now rarely, if ever, employed, it is possible that by inhalation it might be of some small degree of benefit, especially when combined with more active substances. With regard to hydrocyanic acid, its calmative action on the lungs is well known. Tobacco itself has for a long time been used as a parasiticide, and the late Professor Formad, of the University of Pennsylvania, used to say that if the saliva of a man who did not use tobacco was injected into a rabbit the animal would die in convulsions, while the saliva of "smokers" had not nearly so toxic an effect. Is it not probable that this is so because the poisonous ptomains and bacteria which saliva ordinarily contains are rendered innocuous by constant contact with the smoke with its contained phenol, creosote, etc., and, if so, is it not likewise probable that this smoke when inhaled will kill or render inert microörganisms with which it may come in contact in the bronchial tubes, and in less degree in the lungs? And while we must probably allow that too small a quantity of the smoke as a rule enters the lungs to act in this manner, yet if the approaches to the citadel are protected the castle itself is secure. It is well known that certain chronic pulmonary diseases are largely due to the presence and activity of microbes.

I have thus referred to the subject from its antiseptic and bactericidal aspect. I will now say a word as to the physiologic effect of tobacco-smoke on the pulmonary circulation. As this effect is produced through the influence of the nerves, I first mention a few anatomic and physiologic facts prefatory to treating the subject from a physiologic standpoint. The nerves that supply the lungs are derived from the anterior and posterior pulmonary plexuses, which are formed mainly by the pneumogastric and sympathetic nerves, and for our present purpose we may only consider the pneumogastric, which is what is called a mixed nerve, *i. e.*, one supplying to certain regions motor influence, sensory, vasomotor, etc. This nerve is not only distributed to the lungs, but is the inhibitory nerve of the heart, preventing its too rapid action, and when stimulated, causing it to beat more slowly. Some of its branches are distributed to the larynx, pharynx, etc., not to mention other distribution, which does not concern us in this article. Now, the stimulation of an afferent nerve will, as a rule, increase the tonic influence of the vasomotor center, and through reflex action will cause a considerable constriction of certain arterioles and consequent local anemia. Now, it is more than probable that when the terminations of the pneumogastric and other nerves connected with it which terminate in the mouth, pharynx, etc., are stimulated there will be produced by reflex action a constriction of the pulmonary arterioles and capillaries. In tobacco-smoke we have an agent that at first stimulates the peripheral terminations of the pneumogastric. (When used to excess it is later a depressant of that nerve, but we are speaking of its use in moderation.) It also stimulates the peripheral terminations of the glosso-pharyngeal, the fifth, etc. The result of this stimulation of the pneumogastric is that by its reflex cardiac action the heart is slowed, while by its reflex vasomotor influence on the pulmonary circulation there is a constriction of the pulmonary arterioles and capillaries, and a mild degree of pulmonary anemia, or if there were previously a tendency to congestion, there would result an approach to a normal condition.

Now, as chronic pulmonary affections are largely dependent on chronic congestion, it is evident that a simple agent which tends to relieve or prevent this congestion is greatly to be desired. Here, then, is a condition in which a cigar is a blessing. The sedative action of tobacco-smoke on the lungs in cases of asthma, etc., is well known. How much of this is due to its hydrocyanic acid, how much to its creosote, its collidin, etc., or how much to the combined effects of all, is at present unknown; but the fact remains that it often affords relief. Perhaps it is partly due to its lessening local congestion in the bronchioles, as already described, as well as by allaying the spasm of their muscular coats. If, therefore, we have in the smoke of tobacco an agent that will destroy germs or prevent their development in the mouth, and to some extent in the bronchial tubes, and will relieve or prevent pulmonary congestion, is not this smoke a preventive of pulmonary disease? I may here add that even in those who smoke to great excess and inhale the smoke there is rarely, if ever, produced by it any direct injury to the lungs, unless it be due to certain extraneous causes, such as the paper covers of the cigarets being improperly made, and giving rise when burned to certain extremely irritating or poisonous substances being mixed with the tobacco-smoke, or, of course, by excessive smoking the general health might be so impaired and the vitality so lowered that the lungs, as well as other organs, would then be unable to resist disease. When care is taken that the covers for cigarets are properly made, as in France, where the Government regulates this, it is most probable that there rarely if ever would result any direct injurious effect on the lungs by the smoke of tobacco even in the form of cigarets and direct inhalation of the smoke. Though we must not forget the *reflex* effect of an *excessive* amount of smoke when the primary stimulation of the pneumogastric being followed by subsequent depression, there would result an increased frequency of heart-beats, dilatation of pulmonary arterioles, and consequent pulmonary congestion, which condition would be favorable to the development of disease.

It may be well, before concluding, to allude to the apparent protection against pulmonary disease which is afforded by working in tobacco-factories, though this is not universally acknowledged. In Stillé's *Therapeutics* we find it stated that "according to Dr. Rueff chronic pulmonary affections are infrequent among tobacco-workers, and he even affirms that some among them who enter the factory with emaciation, hemoptysis, and cough, have there got rid of their pulmonic symptoms." According to the same authority, in the tobacco-factories at Bordeaux, "consumption is unusual among the operatives, and the disease advances less rapidly in them than in patients placed under different circumstances." He further adds, "that in most of the tobacco-factories it is far less frequent than among the surrounding population, and indeed is in some quite unknown." Many others have made similar observations. So, while tobacco and its smoke have not received the scientific attention they deserve, enough is known about them to indicate it to be highly important that more careful study should be bestowed on these subjects, which are of such vital interest to humanity.

COSMIC DUST.

The Living Organisms Therein in Relation to Disease.

By THOS. S. BLAIR, M.D.,
OF HARRISBURG, PA.

An article I prepared upon this subject and published a couple of years ago has aroused so much interesting criticism that I have carefully investigated the subject anew, and venture to present it to the profession. At first sight it appears quite speculative, but I believe it warrants serious investigation.

That thousands of tons of meteoric matter and cosmic dust are annually precipitated upon the earth, and that the amount of such deposit is subject to great variation, are generally admitted. That much of this matter is permeated with life-germs has been announced by a few observers. Darwin described a shower of strange organisms covering an area of over a million square miles, proving by its extent an origin probably beyond the limits of our atmosphere. In a fall of yellow snow at Peckeloh, Germany, Weber found myriads of germs. A most remarkable cosmic shower occurred in 1755 in Northern Italy. The precipitation embraced an area of about two-hundred square leagues, and was an inch in depth at places, the Alps also being covered with a colored snow to the depth of nine feet. In October, 1846, a shower of microscopic organisms was observed in France, and over one-hundred different forms were described of a character similar to that of no known species. Ehrenberg estimated that forty-five tons of organic germs fell in this shower. In 1803 Italy and all Southern Europe were visited by a similar shower, and ten years later Calabria was the scene of a like phenomenon. Palestine and also Western Kentucky have had such showers. It is hardly reasonable to infer that the immense amount of organic matter in such showers is all of terrestrial origin. Recent investigations have proved colored snows to be filled with organisms, and the polar snows are said to have yielded more than three-hundred different life-forms. These organisms can hardly be produced in our atmosphere, millions of hundred-weight of them, according to Dana, having fallen since the days of Homer, who first described them in the *Iliad.* I have given but a partial list of such phenomena, and am indebted to Professor I. N. Vail for some of the data presented.

It is regarded as proved that all terrestrial matter, except as influenced by igneous action, contains living germs. Matter is matter throughout the universe, and it requires no stretch of imagination to believe that bacteria exist upon other planetary bodies and in the cosmic clouds in interplanetary space. It is quite probable our burned-out earth had remained sterile had no life-forms entered it in this manner, as life does not generate *de novo*. It is very reasonable to suppose that when "the primordial seas," geologists tell us, fell to the earth, they carried to it many forms of living matter, possibly in their present, but very much more likely in antecedent forms. We have seen that over three-hundred forms of life-germs, of presumably non-terrestrial character, have been discovered in cosmic-dust showers. From what we know of germs in general *some* of these forms must have pathogenic properties. Many, of course, are dead, others are myceliæ, and but a portion bacteria. Many of the latter are undoubtedly non-pathogenic. It is unfortunate that cultures of these germs have not been made and their properties tested; but granting that no single one among them is possessed of specific pathogenic influence, we know that their action, if present in great numbers, would be deleterious to higher animal life, because any species of bacteria existing in sufficient quantity has such qualities. Very fatal epidemics of intestinal and other disorders have resulted from the mere accumulation of filth in which bacteria rated as non-pathogenic abound.

Careful observation has shown that the amount of cosmic matter descending in occasional notable showers, great though it is, is but small compared to the constant imperceptible additions of such matter to the earth. Hence, if cosmic germs influence the health of higher animal life on the earth the factor is a constant one. Bacteria reaching us from an environment differing from that they find here might at once perish because of temperature-changes or lack of the necessary elements for their growth, and so be negative in their influence, and doubtless many forms are so. Countless myriads of the cosmic germs reaching us are dead, presumably because of the intense cold of space, but it is remarkable how tenacious of life are some germs and the spores of most bacteria. Certain varieties will thrive in ice. I have not the article at hand, but I remember reading detailed experiments made about 1889 that proved that the ordinary bacterium termo could, in successive generations of its growth, be gradually subjected to greater and greater heat until germs were made to thrive in a temperature fatal to their ancestors. Some of these germs might live for a time and then die out. If they did, any disease they might engender would die with them.

In the fourteenth century the so-called "Black Plague" *suddenly* came upon the world and carried off nearly fifty-million victims. It was apparently a specific germ-disease and spread much faster than the lines of commerce could carry it. It seemed to be everywhere, on sea and land. An old chronicle says: "The impure air was actually visible as it approached with its burden of death, and a dense and awful fog was seen in the heavens." On several occasions peculiar clouds have accompanied plagues. What caused the black plague, and why has it ceased from off the earth? That the earthquake and volcanic eruptions preceding it could be the cause will hardly stand scientific scrutiny, nor will the presence of filth and the lack of food account for a specific disease of uniform type throughout the known world. On the theory that the plague was caused by cosmic germs, these difficulties are removed, and its widespread character understood. Its cessation might be ascribed to the earth swinging out of range of the cosmic dust carrying the germs, which, not finding proper environment on the earth, ceased to multiply, and so became extinct. The old type of "spotted fever" could be accounted for on like grounds. It is almost unknown now, and much resembled the "black death" of 1866 and 1867, which is now an extinct disease. Between the years of 1811 and 1846 epidemic cerebro-spinal meningitis largely prevailed as a practically new form of disease, and was widely spread and very fatal. The epidemic form of this disease has all but disappeared. Here, then, we have a group of epidemic affections coming unannounced and as quickly disappearing. Demonstrated theories do not account for this.

In a second group might be placed diseases presumably caused by an influx of large numbers of previously unknown cosmic germs, finding a suitable habitat only in certain regions, and, after the *first advent* of the affection, *limiting* their influence to that portion. Yellow fever is a marked instance in point. First appearing at the end of the fifteenth century, it was widely diffused, but, probably when new accessions of the germs causing it ceased, the disease limited itself to regions where they found suitable soil. Be this the cause of the limitation of area amenable to the disease, or not, we know that at present yellow fever is limited to an area within 48° of the equator, and to no more than 2500 feet above sea-level. Dengue or "dandy fever" is of this group. Coming suddenly in 1827, it gave Philadelphia pathologists an opportunity to speculate upon "jimson weed" and other equally amusing etiologic factors. It is still attributed to many causes, but we know it soon died out except in southern latitudes, because it is probable the germ can only flourish there.

The large group of epidemic diseases, such as typhoid fever, diphtheria, and scarlet fever, are commonly designated "filth-diseases," and they will doubtless be held more and more in check as civilization advances along hygienic lines; but these epidemic manifestations not caused by filth have always been a puzzle to me. Our most recent plague, "la grippe," has prompted this investigation on my part. It also came suddenly. It prevailed throughout nearly the whole world, and, in a few weeks' time, was "quite the style." It came insidiously, as the latest popular song, and all manner of theories have been advanced as to its cause. Most of them attribute it to some peculiar quality of the atmosphere irrespective of prevailing winds and lines of travel. Sensible people readily enough admitted that electric currents or an excess of ozone was its cause, simply because such speculation is "the order of the day." I am well aware that the germ-theory of disease is being overdone, and that bacteria are supposed to cause nearly all ills except old age, poverty, and credulity; but, looking at the matter candidly and without conventional bias, it has appeared to me at least reasonable to attribute this disease to cosmic germs. The history of the affection thus far lends color to the view. Were I a prophet I would predict that every winter for a few years yet we will have more or less influenza, but that in ten years it will be practically extinct.

Finally, I may say that while the foregoing theory seems to me to be reasonable and explanatory of some scientific puzzles, it will require elaborate research at the hands of many investigators for its full establishment or for its entire overthrow.

PRELIMINARY NOTE UPON A FEW OF THE CHANGES FOUND IN THE FIELDS OF VISION WHILE THE EYES ARE PLACED AT RIGHT ANGLES TO THEIR ORDINARY POSITION.

By CHARLES A. OLIVER, A.M., M.D.,
ATTENDING SURGEON TO THE WILLS EYE HOSPITAL; OPHTHALMIC SURGEON TO THE PHILADELPHIA AND PRESBYTERIAN HOSPITALS, ETC.

In the fall of 1893, during a conversation with Dr. S. Weir Mitchell, of this city, he spoke to me of the advisability of conducting a series of scientific experiments in order to determine why it is that a more vivid color-impression of a distant landscape can be obtained when the head is bent down into a horizontal position. To perform these properly Dr. Mitchell suggested that a study of the relative values of both form and color-fields whilst the head is held in the ordinary upright position and whilst it is lowered into as near a horizontal one as possible, might be of use in determining the reason.

These experiments, which I performed with the aid of a number of assistants and friends, will be fully explained in a paper that, although finished some several months ago, is being reserved for later publication.

After duly considering the differences of color-values when reflected through the various meridians of the dioptric media and the increase of physiologic power from greater blood-supply to the organ when the head is held in the lowered position, the conclusions reached in this paper, after some two hundred or more experiments, show definitely that such a change in the position of the eye practically brings the most sentient portion of the retinal sheet into a situation that allows it to receive impressions from a part of a distant view that ordinarily impinge upon a lower grade of material, which gives a less vivid and a less detailed visual picture.

Dr. D. Hack Tuke, the well-known alienist and author, died in London on March 5th, at the age of sixty-eight.

CLINICAL MEMORANDA.

ASTHMA AND ANEMIA RELIEVED BY REMOVAL OF NASAL POLYPI.

By J. B. SCOTT, M.D.,
OF GETTYSBURG, PA.

Although it is well known that nasal affections cause asthma, it would appear from the history of this case that the fact is not generally given the recognition that its importance demands. I therefore report the case just as it happened, because it seems to constitute a strong plea for the more general examination of the nasal passages in diseases of the respiratory tract, and also of the circulation.

Five years ago, an elderly lady came to me for treatment for bronchitis, asthma, and a condition of general malnutrition. She was anemic; the pulse was irregular both in frequency and in power; there was no cardiac murmur. *The nasal passages were not examined.* The bronchitis and the general condition improved under treatment, but the asthma was uninfluenced. At the close of the summer she changed her residence, and during the five years past has resided in several of the cities of the Middle and Southern States. In each place she was treated by physicians of reputation, some of whom were eminent. The result was invariably the same, some improvement in the bronchitis and general health, but the asthma grew worse. *None of the physicians examined the nose.* Last summer she again came to me, and greeted me with the remark: "Doctor, I don't expect you to relieve the asthma; it seems no one can do that in all these years, but if you can only give me something to relieve the awful dryness in my mouth at night, so that I can get a little sleep, I will be grateful."

As there was no local disease of the mouth to account for the dryness, mouth-breathing due to nasal obstruction occurred to me as a possible explanation of the symptom, and an examination was made through the nasal speculum. The left nostril was seen to be literally packed full of mucous polypi, while in the right passage a big one, looking like an oyster, acted like a ball valve, alternately opening and closing the slight air-current that found room to pass. Here seemed to be the solution of the whole problem. Nasal respiration being impossible, the mouth necessarily remained open and became dry, while the inspired air, deprived of the warmth and moisture normally imparted by the nasal mucosa, irritated the bronchial tubes, and maintained the chronic inflammation. The feeble and irregular circulation was due to a reflex action on the heart.

The patient having been told that some benefit might result from removal of the polypi, readily assented to the operation. The polypi were attacked with a Bosworth's snare and Allen's forceps. I say "attacked," because it proved to be a right bloody battle before they were gotten out, but it ended in victory, for that night the patient was entirely free from asthma—a new experience to her. The next night, however, there was a slight return. Examination showed that a small polypus, which had pressed out from one of the recesses of the cavities, after the removal of the others, was obstructing the passages. It was removed, and with it disappeared the last vestige of the asthma. Three months have passed without any attack, while before they were of nightly occurrence.

Although a sharp exacerbation of the bronchitis resulted from exposure to cold, it was unattended with any asthmatic symptoms. It, therefore, seems clear that the asthma was due to the polypi, because it stopped on the removal of those obstructing the passage; it recurred when one hidden from view at first appeared in the left cavity, and because the exacerbation of the bronchitis was not attended by any asthmatic paroxysm. *The whole physical condition of the patient was improved*, probably as a result of the more perfect respiration, and consequently more perfect oxygenation of the blood. The varied experience of this patient seems to show that, even in certain high places, examination of the nasal passages is not a routine measure, and it certainly shows that it ought to be in diseases both of the respiratory tract and also of the circulatory system, particularly in *anemic* cases.

PAROXYSMAL HEMOGLOBINURIA DUE TO COLD.[1]

By LOUIS FAUGÈRES BISHOP, M.A., M.D.

My patient was a male, fifty-five years old, a native of Denmark, a sailor, whose father died of apoplexy and mother by accident. One brother died of pulmonary tuberculosis, one sister died of inflammation of the bowels, and two sisters are living. The man had smallpox in 1871, yellow fever in 1854, malarial fever in Savannah in 1860, but in all cases made good recoveries. About twelve years ago, after exposure to extreme cold for a long time, he passed blood-colored urine, with a stinging sensation along the urethra. Since then, whenever he is exposed so as to get his hands and feet cold, the blood-colored urine has reappeared. During the winter he has suffered severely on account of the severity of the weather. During warm weather he has never had an attack. During the past four weeks there have been ten or eleven attacks. When the attack comes on there is a very urgent desire to urinate, and urine is passed in spite of efforts to retain it. This happens as long as the urine is very dark, but when it becomes clearer the desire is not so urgent. He has had severe attacks of pain in the back for eight or nine years. When the urine contains blood-pigment the amount is diminished.

There are no signs of cystitis or of stricture. In summer, when he is free from the ordinary attacks, he is troubled with attacks of cerebral symptoms at night, during which he rises from sleep, frightened, and imagines that there is someone going to put him in a barrel, etc. He drinks bitters, and about five or six glasses of beer daily, occasionally a little whiskey. In 1859 he was exposed in a wreck, at which time a companion was frozen to death. He served in the army during the war, and was much exposed. He attributes his disease to exposure. He can produce an attack artificially at any time by voluntary exposure to cold. An examination of the urine between the attacks was negative; during the attacks a small amount of albumin was present, and it contained much blood-pigment, but very few blood-cells; there was a deposit of a very heavy brownish sediment. It seems very probable that this man's idea of the cause of his disease, namely, exposure, is the true one.

The recurrence of cerebral symptoms replacing the attacks of hemoglobinuria is curious. Dr. William Osler mentions a case in which epileptic seizures occured at the same time as attacks of hemoglobinuria; here we have cerebral symptoms occurring at the times when the attacks are absent. In this case there is nothing to suggest Raynaud's disease, which has frequently been associated with this condition. The sufferings of this man are great, and as there did not seem to be any way of influencing his condition by medication he was advised to take up a permanent residence in a warm climate, but it would be disastrous should the cerebral symptoms become more frequent in the absence of the attacks of hemoglobinuria.

36 West Thirty-fifth Street.

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[1] Read before the New York County Medical Association, February 18, 1895.

BACTERIOLOGIC REPORT.

A DETAILED REPORT OF SOME EXPERIMENTS IN THE PRODUCTION OF THE DIPHTHERIA-ANTITOXIN.[1]

(*From the Bacteriologic Laboratory of the Medical Department of the University of Wooster, Cleveland, Ohio.*)

By A. P. OHLMACHER, M.D.,
PROFESSOR OF PATHOLOGY AND BACTERIOLOGY.

This report has for its object the description of a series of experiments in the manufacture of the diphtheria-antitoxin, which, with the support of several of my colleagues,[2] have been recently completed. While I have in the main followed the directions of European authorities for the production of the antidotal diphtheric serum, my methods have varied in certain particulars from those prescribed. Aside from this, many technical difficulties have been encountered and overcome which are not clearly described by the authorities in this work, so that it is hoped this report will contain some valuable suggestions for others engaged in similar experiments.

The diphtheria-bacillus employed was isolated from a throat-swab sent to the laboratory by Dr. Charles Gentsch, of Cleveland, November 4, 1894. The patient from whom the swab was obtained was a girl, five years of age, who presented the clinical symptoms of a moderate attack of diphtheria. The false membrane partially covered each tonsil. The child recovered perfectly in four or five days. Four days before the illness of this child, her brother, aged six years, had died of diphtheria, which invaded his larynx.

The diphtheria-bacilli that appeared in the eighteen-hours' culture on Loeffler's medium were separated from the only other contaminating organism (*Diplococcus lanceolatus*) by the employment of scratch-attenuations on plates of Loeffler's medium. Morphologically, the isolated bacillus was found to be an extreme type of the long, irregular, beaded variety of the *Bacillus diphtheriæ*. In fact, in its early cultures this bacillus showed a tendency to form longer rods than I have ever seen in the diphtheria-organism. While this fact is emphasized, it is not my opinion that the length of a diphtheria-bacillus bears any constant relation to its virulence, as some observers contend; and I hope to show in a future communication that a very short bacillus may be found to possess even greater pathogenic properties than a long one. It fortunately happened, however, that this particular example of the Loeffler bacillus possessed very virulent properties, and that its virulence was retained to a remarkable degree.

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[1] Read in abstract before the Cleveland Medical Society, February 22, 1895, and illustrated with specimens showing various stages of the work.

[2] I take this occasion of returning thanks to my friends who have, in various capacities, assisted me during these experiments.

Dr. H. W. Kitchen obtained the horse, and Dr. C. B. Parker kindly placed his stable at our disposal. Dr. I. J. Kerr assisted at most of the operations on the horse. Dr. Cooley aided us in locating the jugular vein at the first bleeding, and Mr. C. F. Nelson has been useful in many minor but essential capacities.

After isolating the bacillus in pure culture its virulence was tested by injecting 0.5 c.c. of a twenty-four-hours' bouillon-culture under the skin of the belly of a healthy guinea-pig weighing 350 grams. Precisely twenty-four hours after the injection the animal died, with the usual symptoms of diphtheria-intoxication preceding its death. An autopsy made fifteen minutes after the death of the animal revealed all the usual lesions of experimental diphtheria.

In the interval before commencing the manufacture of the toxins the isolated bacillus was tested by the usual cultural methods. It was found to grow typically in gelatin without liquefying the medium; to produce acids first and alkalies later, in glucose-litmus agar; to make "invisible" growths on potato; and to multiply in milk without coagulating it.

THE MANUFACTURE OF THE TOXINS was commenced November 18, 1894, when 250 c.c. of ordinary neutral beef-peptone-bouillon were inoculated from the sixth generation of our bacillus, which had been all the while grown on Loeffler's medium.

In the preparation of the first lot of toxins the method of Roux was partially followed. The bouillon was kept in a large Erlenmeyer flask, with a side-neck, both the mouth and the side-neck of which were stopped with cotton before the sterilization of the flask and its contents. The bouillon-culture was allowed to grow for twenty-four hours in the incubator, after which the side-neck of the flask was connected with a Chapman aspirator, and a current of the moist air from the incubating chamber was drawn over the top of the culture. The aspirating apparatus was disconnected at the end of one week, and the culture was kept in the incubator till November 30th. The purity of the bouillon was now tested by scratch-attenuations on plates of Loeffler's medium, and, as no foreign organisms were found, the bouillon was passed through a Kinyoun filter. To the clear, yellow, germ-free filtrate ½ per cent. of carbolic acid was added. This carbolized filtrate was our diphtheria-toxin, and it was kept at the ordinary laboratory-temperature until it had all been used.

The potency of this lot of toxin was tested according to the standard formula. With the aid of the long, graduated pipet of a Petri syringe, 0.1 c.c. of the toxin was injected under the skin of the abdomen of a lively guinea-pig weighing 400 grams. During the first twenty-four hours the animal showed no signs of illness. At the end of thirty-six hours it was decidedly sick, and presented the same symptoms of intoxication shown by the pig previously inoculated with the bouillon-culture of the living diphtheria-bacilli. The animal died between the fortieth and forty-eighth hours. The autopsy showed, in an exaggerated form, all the lesions noted in the pig killed with the bouillon-culture of the same bacillus.

After the completion of this first lot of toxin, more of the material was prepared. In all of the later products I have done away with the troublesome methods of attempting to "force" the cultures by currents of air or oxygen. In fact, in my own work I have departed, in certain particulars, both from the French and German formulæ. The French method, proposed by Roux, consists in forcing the bouillon-cultures with currents of moist air, with the employment of a formidable battery of special flasks; and the culture is grown for a month, when it is filtered with bacteriologic precautions to prevent contamination, no disinfectant being added to the filtered toxins. This method takes too long; the elaborate apparatus is expensive, and, I believe, useless; and the finished toxins are liable to become infected unless the most rigid precautions are taken in handling them.

The Germans grow their bouillon-cultures for two or three weeks in ordinary flasks, then add carbolic acid or trikresol, and employ this mixture, containing the dead bodies of the bacilli. This method has the merit of simplicity, but I cannot convince myself that the injection of the immense masses of dead diphtheria-bacilli[1] is desirable, to say the least. I have, therefore, adopted an intermediate method of making my later toxins.

Ordinary sterile, neutral, beef-peptone-bouillon (about 800 or 900 c.c.), contained in a common liter bacteriologic flask, is inoculated and set in the incubator. Once a day the flask is agitated, to distribute the bacilli that tend to settle to the bottom of the flask. It will be noticed that, like bouillon-cultures of other bacteria, the diphtheria-bacilli grow diffusely in the bouillon for the first few days, and then settle to the bottom of the medium. At the end of two or three weeks in the incubator the bacilli will be found to have entirely subsided to the bottom, and the overlying bouillon will be comparatively clear. The bouillon-culture is now tested for contaminating organisms, and, if found to be pure, ½ per cent. of trikresol is added, with agitation to secure its solution. After standing an hour or two the bouillon is filtered through any one of the unglazed porcelain filters employed by bacteriologists. The resulting brilliant, pale-yellow fluid containing ½ per cent. of trikresol is the finished product. It contains no bacteria, and, in virtue of the trikersol,[2] no bacteria can develop in it, even though it be kept in an ordinary stoppered bottle and handled without special precautions. These toxins may be kept at the ordinary room-temperature, and while it may be preferable to keep them in the dark, I have not observed any diminution of virulence in a lot of the toxins kept in the light of the laboratory for several weeks.

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[1] At this point I may remark that I can see absolutely no excuse for the employment of the very dangerous methods in which the *living* diphtheria-bacilli are used to secure immunity in the horse. We know altogether too little about the ultimate relation of the living bacilli to their host; and from experiments on smaller animals it would not be surprising to find that the horse will ultimately succumb to a chronic diphtheric cachexia after inoculation with the living bacilli. These objections are especially significant, it seems to me, as we can secure an equally powerful immunity by a much less dangerous method.

[2] Trikresol is employed in preference to carbolic acid because it is claimed that is not so toxic for animals, and that it is a more

A liter of toxins from the eighth generation of our diphtheria-bacillus was finished January 14, 1895. During its stay in the incubator this culture was exposed to some hardships, for, owing to the extremely cold weather, and to an imperfect gas-regulator, the temperature of the incubator varied, on several occasions falling to 30° C., and several times rising to 40° C.

This lot of toxins was tested on January 15, 1895, by injecting 0.1 c.c. into a guinea-pig weighing 390 grams. Twenty-four hours after this injection the animal was very sick. Between the thirtieth and thirty-sixth hours it died, with the usual symptoms.

This lot of toxins has been used for the immunizing injections in the horse from January 15th to February 12th, and it has been kept in an ordinary glass bottle at the laboratory-temperature all of the time. Although it has been tested several times, it has never failed to kill a guinea-pig inside of thirty-six hours in an injection of 0.1 c.c., showing it to be a more powerful product than the first lot made from an earlier culture with the aid of the "forcing" method.

As these toxins are all that could be desired for potency, I conclude that a little fluctuation in the incubating temperature is not harmful, and that the efforts to increase the intensity of the toxins by growing the cultures at a higher temperature than that ordinarily maintained in our incubators are useless. In fact, I may here remark that my experience only strengthens my conviction that the whole secret of intensely virulent toxins lies in the employment of a variety of the diphtheria-bacillus that happens to possess a high grade of virulence when it is implanted into the bouillon. I do not believe it possible to intensify the virulence of its toxin-production by artificial means once the bacillus has gained access to the culture-medium. Undoubtedly such factors as the composition and reaction of the bouillon culture-medium have considerable influence in determining the character of the toxins manufactured by the bacilli, but these factors are quite as much beyond our control (in their finer relations), and are as much matters of chance, as is the virulence of a given variety of the diphtheria-bacillus. Our bacteriologic technique is not above scientific reproach, and the last word on the question of variation in bacteria has by no means been spoken.

It has only been in the last lot of toxins, from the ninth generation of our bacillus which was obtained three months ago from the patient, that a diminution of virulence has been observed. In order to attempt the restoration of the lost virulence I shall resort to a method that I have recently found very effective in some other experiments with the diphtheria-bacillus, and that differs in one respect from the usual method. I shall inject a half a cubic centimeter of a twenty-four hours' bouillon culture of the bacillus under the skin of the abdomen of a guinea-pig. As soon as the animal has died a bacteriologic autopsy will be made, and instead of recovering the diphtheria-bacilli from the local focus of infection, as is ordinarily done,[1] pieces of the liver, spleen, or adrenals will be transplanted to bouillon; and after two or three days tubes of Loeffler's medium will be inoculated from these bouillon-tubes, when the bacilli will be recovered, and if they are found to have acquired increased pathogenic property they will be employed in making a stronger lot of toxins. This prediction is made with due conservatism, however, for my increasing acquaintance with the inexplicable variations of the diphtheria-bacillus has tended to diminish my feeling of security in any particular experimental method.

As to the Production of Immunity in the Horse. On December 20, 1894, a horse was procured for the continuation of our experiments by my colleague, Dr. H. W. Kitchen. The animal, a mare, nine years of age, and weighing about twelve hundred pounds, was sound physically, though it showed the evidence of poor care, and was unfit for road use on account of the bad condition of the forelegs. The animal had simply been worn out, so far as its travelling capacities were concerned, by overwork on the stone-paved streets of this city. Since the mare has been under the excellent care provided for her in Dr. Parker's stable she has improved wonderfully in flesh and spirits, notwithstanding the fact that she has been exposed to a gradual intoxication with the diphtheria poison.

The spots chosen for the injections were over the shoulders. An area of skin about six inches in diameter was clipped and shaved, and before each injection it was disinfected. The smaller injections were made in a single dose; the larger quantities of toxin were injected in two lots divided between the two sides. The smaller injections were made with a Koch syringe, and the larger ones were made with a small aspirating syringe, with a cut-off arrangement, by which the syringe could be filled from a bottle and the fluid then forced into the tissues of the animal.

The first injection of the original toxin was made on December 20, 1894, the day the animal arrived at its new quarters. Precisely 0.5 c.c. of the undiluted toxin was injected with a Petri syringe. The following morning the animal refused its mess of oats, and it gave an exhibition of bad temper for two or three days following

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powerful germicide. The question of a non-toxic germicide is of some importance, as in the large doses (250 c.c. or more) of toxins injected into the horse considerable of the germicide is administered.

[1] Bardach (Annales de l'Institut Pasteur, Tome ix, No. 1, 1895, pp. 40–55) has just recorded some very interesting though very much prolonged experiments in the intensification of the virulence of an old diphtheria-culture. Arguing that the diphtheria-bacilli that survived the phagocytosis at the point of inoculation possessed more hardy characters than those that succumbed, he proceeded by injecting bouillon-cultures under the skin of a dog, and, after fifteen hours, recovering the bacilli from the local exudate. In this way the virulence was slowly reinforced, but it was only after *twenty-five* such passages through the dog that a high grade of virulence was established in the bacilli. In my own work I have not attempted to recover the bacilli from the seat of inoculation, but believing that those bacilli which gained access to and survived in the visceral organs were the most virulent, I have recovered them from these organs. In this way I was able, for instance, by a single passage through a guinea-pig, to make a diphtheria-bacillus that only killed a guinea-pig in fourteen days become so virulent that it killed an animal of equal weight in thirty hours, in a much smaller dose.

the injection. This was all the constitutional disturbance that could be discovered, and there was no marked elevation of pulse or temperature. Locally, however, the effects of the toxin were very marked. Within three or four hours after the injection an area of 3 or 4 cm. in diameter became swollen. This swelling increased and became indurated during the following five days, when it gradually subsided. Three days after the injection a series of blisters appeared over the swollen spot at the site of injection, and after the blisters subsided the superficial layers of the skin raised by these vesicles exfoliated. No other evidences of necrosis were discovered. This injection gave the most pronounced local reaction that we have observed.

A week following the first injection 1 c.c. of the toxin was administered. Then these quantities were injected: January 2, 1895, 2 c.c.; January 7th, 5 c.c.; January 11th, 10 c.c; January 15th, 15 c.c. (new toxin); January 19th, 30 c.c.; January 23d, 60 c.c.; January 28th, 100 c.c.; February 1st, 180 c.c.; February 5th, 250 c.c.

Thus the advance from 0.5 c.c. to 250 c.c. was made in one month and sixteen days, and but eleven injections were required to complete the immunity. The first five injections were from the original lot of toxin, which killed a guinea-pig in from forty to forty-eight hours in a dose of 0.1 c.c. The remainder of the injections were made with the more simply prepared lot of toxin, which killed guinea-pigs in from thirty to thirty-six hours in a dose of 0.1 c.c.

The effects of these injections in the horse were both local and general. Locally, the tumor that was induced by the injection of the mass of liquid under the skin persisted two or three days, and the spot felt hot and appeared to be painful when pressed upon. The injections were all made in the afternoon, and the horse usually refused its evening mess of oats, and for the first few hours after the injection of the poison stood with drooping head and ears and the dejected look of a sick animal. Usually it brightened and ate and drank well the day after a dose had been administered, though it always exhibited bad temper for a day or two after the injection, so that the attendant sometimes had trouble in entering the boxstall in which it was kept. This bad temper, which was especially directed against myself, precluded the possibility of systematically taking the animal's temperature; though there was no striking elevation of temperature or increase of pulse on the occasions when these observations were made. Twice the reactions to the toxin were unusually sharp. After the injection of 10 c.c. the local reaction was more pronounced than ordinary, the swelling was more marked and seemed more "feverish" and tender than usual. After the injection of 60 c.c. the animal appeared to be decidedly sick for two or three days. It stood perfectly still and refused its food and drink for two days. This injection was, by mistake, made deeper than usual, and I have no doubt the toxin found its way along the muscular fasciæ, as the usual local tumor of a subcutaneous injection was not apparent after this dose. Instead of this, a diffuse swelling developed and extended from the shoulder down the corresponding leg, as though the poison had infiltrated along the muscular sheaths, causing an inflammatory reaction wherever it touched. The animal seemed to suffer principally from a lameness of the right shoulder and foreleg over which the injection was made. The trouble was aggravated, I am sure, by the previously poor condition of the forelegs. As no such reaction was ever observed after any of the injections made simply under the skin, I have concluded that deep injections are objectionable, and that they will seriously delay the progress of immunity. On the whole, however, the animal's tolerance of the poison was remarkable, and, by watching the effects carefully, and pushing ahead fearlessly, the desired end was reached in a very short time and without serious mishap.

Since the maximum dose of 250 c.c. was given, the horse has received two injections. On February 12th, 150 c.c. were given, and on February 18th, 250 c.c. I shall now inject about 150 c.c. of the toxin once a week between the bleedings, and give a dose of 250 c.c. four days before a bleeding.

BLEEDING THE HORSE. On February 9th, four days after the administration of the dose of 250 c.c. of the toxins, the horse was bled for the first time. Some swelling still marked the site of the injection-tumor, but the animal was in excellent constitutional condition. At this first operation 400 c.c. of blood were obtained for purely experimental purposes.

The method of bleeding that I have adopted also varies from the directions usually given. A considerable area of skin over the location of the operation-seat is clipped and then shaved. A thorough scrubbing with green soap and water succeeds; and then the skin is disinfected by copious washing with a corrosive-sublimate solution, followed by alcohol and ether. The jugular vein is located by securing its distention with the finger of an assistant pressing upon the vein low down in the neck, then an incision is made in the direction of the vein, about midway between the head and shoulders. A careful dissection is made so as to expose the vein for an inch or two of its course. By occasionally provoking the distention of the vessel it can be more easily located in the depths of the wound. The vessel is now loosened from its surroundings and carefully drawn out of the wound with a strong, long-handled, blunt hook.[1] When everything is ready the vessel is clipped with a pair of scissors, and the flowing blood is caught in the receptacle provided. By properly manipulating the blunt hook under the vessel, the stream of blood can be guided in any desired direction; and by simply making a little traction on the hook, the flow of blood can at once be stopped. When sufficient blood has been withdrawn, a deep suture of silk is inserted so as to bring the edges of the muscles together *over* the vein; the vessel is then released, the suture tightened, and in a few moments the bleeding will all cease. Then the superficial wound is to be closed with a few silk sutures, and an antiseptic gauze dressing is applied. Of course, this operation must be performed with proper surgical precautions; and a gauze compress must always be at hand to clap over the vein in case of accident, to prevent the inspiration of air and air-embolism.

At the first bleeding some careless exploration with the unclean fingers of an untrained assistant gave us an infected wound, and a smart cellulitis with local suppuration was provoked. The second operation was performed with only a slight reaction at the site of operation.

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[1] I have employed for this purpose an ordinary uterine sound, bent at a proper angle.

Compared with other methods of bleeding I think this procedure has some advantages. It is less troublesome than the bleeding through a canula, and the stream of blood can be guided, and the bleeding stopped, quite as readily as with the more complicated method.[1]

The first 400 c.c. of blood were caught in a 16-ounce, wide-mouthed screw-cap jar.[1] At the second bleeding, made February 21st, about 3000 c.c. of blood were caught in seven of these 16-ounce jars. The jars were first disinfected by washing with sublimate, alcohol and ether, and then drying in a hot-air oven.

AS TO THE SEPARATION AND PRESERVATION OF THE SERUM.[1] As soon as the jarful of blood is caught, the cover is replaced, and it is set aside, undisturbed, until the whole mass of blood has firmly coagulated. This takes from one-quarter to one-half an hour. The "buffy coat," characteristic of slow coagulation in horse's blood, often appears, and this must not be mistaken for serum. As soon as the blood has firmly clotted it is transported to the laboratory. A clean spatula-blade is now carefully passed between the clot and the sides of the jar so as thoroughly to loosen the clot from top to bottom. Then the blood is set aside in a cool place. The next day a considerable quantity of clear, straw-colored serum will be found on the top and at the sides of the contracting clot. This serum must be carefully drawn off with a large (25 c.c. or 50 c.c.) pipet, and transferred to a clean vessel. During the removal of the serum the blood must not be agitated or else red blood-corpuscles will rise and spoil the serum, though they may be partially removed by the use of the centrifugal machine. On the second, third, and even on the fourth days additional quantities of good serum can be obtained from the blood, providing it is kept cool and sweet. So long as the serum remains clear, straw-colored (not red), and sweet, it is available. This serum is our *diphtheria-antitoxin*.

We now come to a matter that, while very small at first sight, is nevertheless of much importance; that is, the preservation of the serum. To read the ordinary directions for this procedure one gets the idea that all that is necessary is to add ½ per cent. of carbolic acid or ⅓ per cent. of trikresol to the serum, and its preservation is assured. "Das ausgeschiedene klare Serum wird abgeschöpft, mit 0.5 per cent. Carbol versetzt, um es haltbar zu machen und das Diphterieheilmittel ist fertig." But the desired end is not so easily reached.

The importance of proper preservation was forcibly impressed upon me recently, for I found a sample of a certain commercial antitoxic serum to be literally swarming with a variety of bacteria after a few days' stay in my laboratory.

No better culture-medium for pathogenic bacteria can be desired than this blood-serum, and, unless proper care is taken, the serum becomes the culture-ground for myriads of bacteria, almost before we are aware of a change in its character. Of course, it is possible, by the exercise of extraordinary precautions, such as filtering with bacteriologic precautions, to obtain a sterile serum which may be kept in sterilized vessels until it is wanted for clinical purposes. But even with the most rigid care it is rarely possible to obtain a germ-free serum, and, even were this possible, the serum could only be placed in the hands of a trained bacteriologist for clinical purposes. We must, then, abandon the idea of employing sterile blood-serum for practical purposes, and add to the serum some chemic substance that will safely preserve it, even when it is handled with the ordinary precautions of a physician.

The question of a suitable chemic preservative for the serum is not a matter of indifference. The agent should be (*a*) odorless; (*b*) nontoxic, even when injected in considerable doses; and (*c*) without deleterious influence on the antidotal proteid contained in the serum. The substance should be odorless, so that it will not disguise even the faintest trace of a putrefactive odor, which must at present remain our best rough test of the serum's freshness.[1] In the preparation to which I have alluded camphor was employed as a preservative, and when the fluid was first examined no trace of a putrefactive odor could be detected. It was only after the serum had been shaken vigorously that an odor like that of decayed oysters asserted itself over the odor of the camphor, although the serum was swarming with bacteria. The objection to carbolic acid and trikresol is that they may produce poisonous symptoms of their own when injected in the considerable quantities called for in large doses of the serum. Further, when these substances are added directly to the serum they precipitate some of the proteids. Used in aqueous solutions sufficient to raise the proportion of these chemicals to ⅓ or ½ per cent. a considerable dilution of the serum would be necessary.

In some preliminary experiments made with ordinary serum I encountered all of these obstacles. Besides carbolic acid and trikresol, I tried formalin, chloroform, thymol, boric acid, salicylic acid, and sodium salicylate. Formalin, even in dilute solution, preserves the serum from decomposition, but it causes the serum to become gelatinous; and then we know little about the effects of subcutaneous injection of this substance into animals. Chloroform preserves the serum well as long as it does not volatilize, but it is irritating in injections. Thymol dissolves too feebly to be useful. Boric acid does not possess sufficiently vigorous antiseptic powers. Salicylic acid, in solution with borax, was found to preserve the serum well, though it is a difficult substance to dissolve without the use of water, and water dilutes the serum. Of all the substances I have tried, I have decided upon sodium salicylate as the most eligible for the purpose. It is odorless, and its powder dissolves readily in the serum without producing a precipitate or cloudiness. Its influence in injections, in the quantities required, appears to be perfectly harmless, and we are well acquainted with the therapeutic effects of the drug. It preserves the serum well, as I have found by some very severe tests, such as keeping the serum to which it had been added in an ordinary unsterilized flask for several weeks in the air of a warm laboratory. At the end of this time the serum was perfectly clear and odorless, and a drop examined with the microscope showed no living (motile) organisms. Moreover, this substance in no way interferes with the antitoxic properties of the serum.

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[1] No argument is necessary to emphasize its advantage over the method in vogue with veterinarians, in which they plunge a knife (usually dirty) deeply into the tissues of the neck, stab about until the vein is hit, and then attempt to urge the flow of blood by pressing on the vein below the cut, and by occasionally digging the knife into the wound. The blood flows everywhere except where it is wanted, trickles through the hair of the animal's neck, and stops flowing every few moments. Then the wound is closed with a couple of dirty pins, and a figure-of-8 suture of hair taken from the horse's tail completes the toilet.

[2] These jars, made by Whitall, Tatum & Co., of Philadelphia, are very well suited to the collection of blood for these purposes. They are of very convenient size and shape, and as they have no shoulders it is possible to obtain easy access to the clotted blood.

[3] I desire to emphasize the great importance of employing small vessels for collecting the blood from which the serum is to be obtained. From a considerable experience in the collection of serum from cow's blood, and from one previous experiment with horse's blood, I was never able to obtain more than from 500 to 700 c.c. of available serum from 4000 c.c. of blood, when this blood was all caught in a single large jar. At the first bleeding, however, I used a small jar, and I was surprised to find that from 400 c.c. of blood I was able to obtain 200 c.c. of good serum. Acting on this suggestion I used seven small vessels to catch the 3000 c.c. of blood of the second bleeding, and from this quantity of blood I have obtained 1700 c.c. of perfectly clear, straw-colored serum. When we remember the precious quality of this product, any method that will yield an increased quantity is of much value. I believe the advantage of this method of collection lies in the fact that the contraction of the clot can be more effective in a small mass of blood than when it is exerted on a single large mass.

[1] Camphor is used by Roux, and trikresol or chloroform by the Germans. All these workers filter the serum through unglazed porcelain.

For the present, then, until some better substance can be recommended, I shall employ sodium salicylate as a preservative for the antitoxin. For this purpose I add 1 per cent. of the dry powder directly to the serum, and allow it to dissolve.

Even with the best of preservatives I think it highly desirable, however, to keep the serum in an ice-box until it is to be dispensed; and I would advise the physician who uses any of the products upon the market to follow religiously the direction, "keep in a cool place." As to the necessity of keeping the serum in the dark, I have, as yet, had no experience from which to speak.

TESTING THE ANTITOXIN. On February 10th the salicylated serum obtained from the first lot of blood was treated for its antidotal properties as follows:

Three large guinea-pigs, Nos. 1, 2, and 3, were each given an injection of 1 c.c. of the diphtheria-toxin, mixed with the horse's serum. The toxins here employed were of the same lot as had been injected into the horse, and two days before the test was made 0.1 c.c. of these toxins killed a 300 gram guinea-pig between the twenty-fourth and thirty-sixth hours. This tenfold fatal dose of the toxin was mixed with the antitoxin in such proportion that Pig No. 1, weighing 530 grams, received 1 c.c. of toxin and 0.5 c.c. of antitoxin. Pig No. 2, weighing 590 grams, was given 1 c.c. of the toxin and 0.25 c.c. of the serum; while Pig No. 3, weighing 625 grams, was injected with 1 c.c. of toxin and 0.1 c.c. of antitoxin. The proportions of toxin to antitoxin used in these animals were 10 to 5, 10 to 2½, and 10 to 1.

Not a trace of either local or constitutional reaction has been observed in any of these little animals. Now, eighteen days after the injections, they are all alive and well, their temperatures are normal, their nutrition is good, and not one of them shows a trace of the diphtheric cachexia that often supervenes as a late manifestation of diphtheric intoxication. As these animals have each survived ten times the usual fatal dose of a very virulent diphtheria-poison, we can only conclude that their lives have been spared and illness prevented by the antidotal influence of the horse's serum, even when employed in the proportion of one to ten. For the preliminary tests of the diphtheria-antitoxin these results are remarkably good, and they show that while our methods differed in some details from the usual ones, and while our injections of the toxins into the horse were pushed more rapidly than ordinary, the resulting immunity and the production of a powerful antitoxin were none the less perfect.

In order to complete the testing of the serum according to the European formulæ, it will be necessary to find the smallest possible amount of the serum that will protect a guinea-pig against a given amount of the toxins. According to Behring's notation, the value of a serum is expressed by the proportions that a certain dose of the toxins and a certain quantity of the antitoxin bear to the weight of the experiment-animal, the antitoxin being injected twelve hours before the toxins. Ehrlich's standard is obtained by taking as a unit one cubic centimeter of a serum that in a dose of one-tenth of a cubic centimeter will neutralize ten times the usual fatal dose of the toxins when mixed with it and injected into the animal. By neutralization is meant the complete nullification of the toxins, so that they will produce neither local nor constitutional effects. Guinea-pigs are the animals employed for these purposes.

I have not yet standardized my serum according to these formulæ. In the first place, I do not know the precise fatal minimal dose of my toxins, though I am sure it is considerably under 0.1 c.c. This test and any further tests have been suspended on account of a failure in our supply of guinea-pigs.

In reviewing the essential points in the production of the diphtheria-antitoxin let me lay stress upon:

1. The necessity of obtaining a pure culture of a highly virulent diphtheria-bacillus.

2. The fact that the toxins may be made by simply growing the bouillon-cultures of the diphtheria-bacilli in the incubator for two or three weeks, then adding ½ per cent. of trikresol, and filtering.

3. The secret of a highly potent toxin lying in the virulent characters of the organism employed.

4. The fact that the immunizing injections in the horse can be pushed more rapidly than is usually done.

5. The fact that a number of small vesselfuls of blood will yield more serum than a single large vesselful.

6. The advantages of sodium salicylate as a preservative agent for the diphtheria-antitoxin.[1]

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[1] These experiments were made solely for scientific purposes, and the antitoxin is not for sale. The comparatively small quantity that we can produce will be used by us in those local cases in which a bacteriologic examination can be made. The data obtained from the use of this product on patients will ultimately be used as the basis of a clinical sequel to this report.

MEDICAL PROGRESS.

Trephining for the Relief of Hemorrhage from the Cavernous Sinus Due to Fracture of the Skull.—WATSON (*Boston Medical and Surgical Journal*, vol. cxxxii, No. 4, p. 78) has reported the case of a lad, nineteen years old, who was struck on the head by a brick thrown from a height of twenty feet. He fell, but immediately rose again, falling on his knees, however, an instant afterward. He then got up and walked across the street, and complained of pain in the right eye and above it. Consciousness was lost after an hour, and did not return until the following morning, although the patient could be roused so as to make motions with the limbs. The left pupil was dilated and did not react; the right pupil was normal. Both extremities of the right side were paretic. The knee-jerks were normal; the paralysis steadily increased, and the loss of consciousness gradually became more profound. A slight, simple depressed fracture could be felt an inch to the left of the median line, just anterior to the coronal suture. A large semicircular incision was made, and a skin-flap reflected. Hemorrhage was prevented by transfixing the base of the flap with a needle previous to the incision and compressing the base with a piece of tape passed around it and drawn tightly on the shaft of the needle. The skull was trephined over the site of fracture, and a large blood-clot found beneath the opening. The fracture extended in two radiating lines toward the base of the skull, anteriorly to the outer angle of the orbit and laterally downward toward the petrous portion of the temporal bone. On removing the clot profuse hemorrhage took place. A channel half an inch wide was rapidly cut through the bone along the anterior line of fracture toward the outer angle of the orbit, and enlarged at its lower end. A large blood-clot was then seen to occupy the whole temporal region, and to extend forward and backward beneath the base of the brain. On removing the clot the respiration, which had become slow, shallow, and irregular, at once resumed its normal character. The finger could now be swept over the orbital plate, and the line of fracture could be clearly felt] extending diagonally across it to the sella turcica. From this point arose a profuse hemorrhage, which, so far as could be determined, originated at the point of junction of the ophthalmic vein and the cavernous sinus. The bleeding from this place was controlled by firm packing with iodoform-gauze. The posterior radiation of the fracture could also be clearly followed from the depression on the vertex well down toward the petrous portion of the temporal bone. From this region also a brisk hemorrhage was taking place, probably from a branch of the middle meningeal artery. This was likewise controlled by firm pressure with iodoform-gauze. The ends of the gauze were led through the lower end of the opening into the skull and through a counter-opening in the base of the skin-flap, the edges of which were united with silk sutures. The packing was not removed until the tenth day. The patient made a rapid and uninterrupted recovery. On the morning following the operation he was perfectly intelligent, and complained of no pain or other symptoms. In twenty-four days he was out of bed, and on the twenty-eighth day he was dismissed, well.

Gastro-enterostomy with Bone Plates for Pyloric Obstruction.—SINCLAIR (*British Medical Journal*, No. 1778, p. 188) has reported the case of a man, forty-three years old, who had been a dyspeptic for twenty years, and presented frequent gastric pain, relieved by vomiting. The site of pain was some three or four inches from the pylorus, but a pyloric tumor could not be made out. Weakness and emaciation increased, and the signs of dilatation of the stomach developed rapidly. Treatment was futile, and the washing out of the stomach with a syphon-tube afforded most relief. The man steadily lost strength, flesh, and color, and finally an operation was determined upon in the belief that cicatrization of an ulcer was responsible for the dilatation. On opening the abdomen, gastro-enterostomy was selected in preference to pyloroplasty, on account of the hard, cartilaginous feeling of the pylorus, and decalcified bone plates were employed. The visceral wounds were made very ample, and the plate sutures were supplemented by a row of Lembert's sutures. The stomach was incised about two-and-one-half inches from the greater curvature, and about seven inches from the pylorus. The jejunum was opened about one foot from the duodeno-jejunal junction. The intestine was doubled back upon itself before applying it to the stomach, in order to secure correspondence in the direction of the peristaltic waves in the two organs. The subsequent course of the case was uneventful. For three days nothing by the mouth was permitted, but four nutrient injections were administered daily. On the third day tea, wine, and water, and meat-juice were allowed by the mouth. By the fifth day soup, beef-tea, and white foods, and on the eighth day fish and fowl were added. On the twelfth day ordinary solid food was permitted. The patient got out of bed on the fifteenth day, and two weeks later was ready to resume his duties as a railway-engineer.

Acute Yellow Atrophy of the Liver in a Child Two Years Old.—DONKIN (*Lancet*, No. 3723, p. 28) has reported the case of a girl, two years old, who presented well-marked discoloration of the skin and conjunctivæ. It was stated that three weeks previously she had suffered with cough, constipation, sleepiness, and failure of appetite. Jaundice had been noticed for two weeks. The stools were white, and the urine deeply colored. There had also been vomiting and restlessness at night. The child appeared to be seriously ill. The liver was found to extend one finger's breadth below the costal margin, and appeared somewhat hard and smooth. The upper limit of dulness was perhaps a little lowered. No other abnormality could be detected. In the course of twenty-four hours the restlessness increased, and loss of consciousness supervened, being followed in turn by maniacal delirium. The pupils were equal and rather contracted, but reacted to light. The pulse was 120, and regular; the temperature normal. The jaundice increased in intensity, and the child became very thirsty. Petechiæ appeared on the front of the legs. Later in the day the child became quieter and drowsy, and the pupils dilated and sluggish. The temperature rose to 100° and the pulse to 140. During the night coma gradually set in. Petechiæ became more numerous and the jaundice more intense, and on the following morning the child vomited a quantity of blood and died shortly afterward.

Although a post-mortem examination could not be secured, and there was no opportunity of examining the urine for leucin and tyrosin, the diagnosis of acute yellow atrophy of the liver was thought to be amply justified.

Rhythmic Cough of Nasal Origin.—JOUROUKSCHI (*La Médecine Moderne*, 1894, No. 101, p. 1583) has reported the case of a woman who came under observation on account of persistent cough, which had been present for five-and-a-half years. At first occurring at considerable intervals, the attacks gradually recurred with greater and greater frequency, every four or five minutes, and causing great fatigue. The cough somewhat resembled the barking of a dog. In the absence of a discoverable lesion a diagnosis of hysteria was made, but despite all treatment improvement was not effected. The patient coming under observation a second time, a tumor, which proved to be a lymphadenoma, $\frac{3}{4}$ inch long and $\frac{4}{10}$ inch thick, was discovered in the naso-pharyngeal space in contact with the vomer. On removal of the neoplasm the cough permanently disappeared.

THERAPEUTIC NOTES.

The Treatment of Diphtheria with the Antitoxin.—RANKE (*Münchener medicinische Wochenschrift*, 1895, No. 8, p. 157) reports the employment of the antitoxin in the treatment of one-hundred-and-two cases of diphtheria, twenty-one having died, seventy-four recovered, and seven being at the time yet under treatment. Two of the cases were complicated by measles and eight by scarlatina, and among these there were five deaths. Of the eighty-five uncomplicated cases in which a definite result was known, there were sixteen deaths (18 per cent.). Of this number, bacteriologic examination was made in sixty-five, with positive results in sixty-four. Of the eighty-five cases of primary diphtheria, fifty-four (63 per cent.) presented on admission symptoms of laryngeal stenosis. In seventeen of these fifty-four cases the symptoms subsided after the injection of the antitoxin. In the remaining thirty-seven intubation was necessary.

The mortality from diphtheria in previous years ranged as follows: 1887, 42.2 per cent.; 1888, 43.9 per cent.; 1889, 46.5 per cent.; 1890, 47.9 per cent.; 1891, 46 per cent.; 1892, 56.2 per cent.; 1893, 46 per cent.; and in 1894, prior to the use of the antitoxic serum, 57 per cent.

HECKEL (*Ibid.*, p. 159) has reported six cases of diphtheria treated with the antitoxin, in four of which peptonuria was observed.

Radical Cure for Chronic Dysentery of Recurrent Type.—At the recent Indian Medical Congress GALLAY (*British Medical Journal*, No. 1779, p. 276) related eight cases of chronic dysentery of recurrent type to illustrate the curative effects of large enemata of a solution of crystallized silver nitrate in distilled water, a scruple to a quart. The patient is placed on his right side with the left thigh bent; an enema of tepid water is given first, and when this has acted the solution of silver nitrate, to which from 20 to 30 drops of laudanum have been added, is thrown up. The patient tries to retain it for a few minutes, two, three, or five minutes being the maximum; sometimes it is evacuated in two efforts, the second evacuation being separated from the first by a few hours' interval. The only immediate ordinary consequence of the washing is a sensation of stricture at the lower part of the rectum, which passes away after a quarter of an hour at most. Often from the first washing the amelioration is complete, but at any rate it can be relied upon to follow the third or fourth washing. To secure, however, permanent relief, it is necessary to continue the treatment, and a course of sixty washings is recommended.

Salipyrin for Metrorrhagia.—ORTHMANN (*Berliner klinische Wochenschrift*, 1895, No 7, p. 145) has employed salipyrin in the treatment of fifty cases presenting metrorrhagia from various causes. The drug was given in the form of pastilles, each containing fifteen grains, and one of which was taken thrice daily. When possible, the administration was begun a day or two before the anticipated hemorrhage, and continued through the entire course of bleeding. The total amount given in individual cases varied between three-hundred grains and two-and-a-half ounces. In no case were unpleasant results noted. Forty-five of the cases were under observation for from three-quarters of a year to a year-and-a-half, and from thirty-two exact personal reports were obtained and final examinations made. In twelve of these no satisfactory result at all was obtained. In twelve there was distinct improvement, and in the remaining eight the result could be designated good. The best results obtained were in cases of metrorrhagia following labor or abortion.

The Chlorin quinin Solution of J. Burney Yeo, for the treatment of typhoid fever, referred to in an article by Dr. Emil King in THE NEWS of March 2d, is made as follows: Thirty grains of powdered potassic chlorate are put in a twelve-ounce bottle and sixty minims of strong hydrochloric acid added. A greenish-yellow gas is at once liberated. The bottle is well-stopped and its contents agitated until the bottle is filled with gas. Then water is added, little by little, closing the bottle and shaking it well at each addition, until the bottle is filled.

In twelve ounces of this solution from twenty-four to thirty-six grains of quinin are dissolved, and syrup of orange-peel is added to give an agreeable flavor. The dose is an ounce every two, three, or four hours, according to the severity of the case.

The Sero-therapy of Tuberculosis.—At a recent meeting of the St. Louis Medical Society PAQUIN (*Medical Review*, 1895, No. 8, p. 147) reported a number of cases of tuberculosis treated by injections of blood-serum of horses rendered immune to the disease. The method of preparation was withheld. The serum was administered in does of from ten to one-hundred-and-fifty drops once daily. Among fifteen-hundred injections but two abscesses formed.

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SATURDAY, MARCH 16, 1895.

"ATHLETICS."

THERE has been found one medical journal to espouse the cause of what is passing nowadays under the name of athletics, and we are implored to consider the logic brought forth by a professorial contributor. We have examined the argument as presented by PROFESSOR RICHARDS in the March number of the *Yale Medical Review*, and find it exactly like all previous arguments in favor of foot-ball. It is just as guilty of unwarrantable assumptions of premises, of inconsequential conclusions, just as cunning in ignoring and misstating, just as biased and one-sided as have been all the previous pleas. It is exactly like the argument of a cheap lawyer bound to free his client at all costs. Every old hack statement brought out to bolster up the ruined cause has been repeatedly knocked into smithereens, except, perhaps, that remarkable one about the rise of cities and the growth of athletics, and every telling fact against the author's cause is ignored or minimized. There is nothing more damnatory of the foot-ball craze than such disingenuous arguments and such illogical fustian by supposed logicians. The shrewder men, like Brer Rabbit, recognize that it is better to "lay low and say nuffin," hoping that the storm will "blow over." We are glad to believe that both the silently sly and the schoolboyishly logical are each equally poor judges of public opinion. The public is quite as likely to follow the leading of President ELIOT as of the professor who stigmatizes him as no longer "able to look at more than one side of the subject." We therefore trust that the defenders of foot-ball will continue their defences. Every attempt is an added nail in the coffin of their cause.

We turn with the greatest relief and pleasure from such tricksiness to the straight-out ingenuousness of a blabber of the whole secret. In *The Peterson Magazine* for March, 1895, there is an article that, like an *enfant terrible*, blurts out the whole truth, without sentimental nonsense, moral whine, or patriotic jingoism. DR. ADAMS, in speaking of the progress lately shown by a great Eastern college, says:

> The victories of our foot-ball team in the past few years have undoubtedly been worth more to the institution than an endowment fund of $1,000,000. This may seem at first thought an extravagant statement, but let us stop to consider it. The interest on $1,000,000 is $50,000 a year. This is balanced by the various elements set to work by the enthusiasm created by these victories. In the first place, on the purely financial side, the increased interest in athletics for the past few years has resulted in the building of a $100,000 athletic field. But it has done far more than this: it has paved the way to a more brilliant future for the university; it has attracted the attention and admiration of thousands of growing boys in whose hands to a certain extent is left the choosing of their college for future study. This means that hundreds of boys who might have gone to Harvard, Yale, or Princeton, and whose brothers did go, are now seriously debating the question of remaining in Philadelphia to complete their education. It may seem hard lines that a great educational institution must depend on its success in athletic fields for a proportion of its students, but such is the case, and the college authorities have long since wakened to the truth. It is due to the fact that the American student is generally able to persuade his parents to send him to the college of his choice.
>
> Again, the interest of the public is aroused in the institution by these recent successes, and, having it in their minds, many persons charitably disposed are far more likely to remember it pecuniarily. Then it has hastened the growth of the "university spirit," as will be spoken of more at length later in this article. Again, the fame of the university has spread to many circles and to many regions where it was hitherto but little known. Its affairs attract as much attention now as do the matters concerning the other great universities, a national interest in its affairs having been established. These various influences, aroused or stimulated recently, are worth far

more to the university than $50,000 a year, for they mean growth and activity for increased efforts. This is encouraging, etc.

This refreshing and frank truthfulness, however, suggests many inquiries, among them the following:

1. For what were universities of learning founded?

2. Is it any great advantage to the community or to learning to have students drawn from one college to another?

3. Is the boy the best judge of what constitutes the best institution of learning, and of what are the best educational methods?

4. What about the dignity of advertising an institution of learning by semi-professional "athletic" shows?

5. What will be done with the students stolen from other colleges when they are secured?

6. If foot-ball is far and away the saver of the race, why prepare but a single $100,000 athletic field? Several thousand students will require hundreds of such fields in order to permit all students to acquire the "intellect,"[1] the "morality," the "obedience,"[2] and the muscle requisite in life, and, according to foot-ball logicians, obtainable only by means of foot-ball.

7. Is the "university spirit" so glorious when it results in such a bitter rivalry as to-day exists between Princeton and Pennsylvania, and when it forces one of these colleges to demand a truce of hostilities for a year, in order, *as it is said*, to let the boys "cool off"?

Just as the greatest crimes against religion and freedom are committed in the name of religion and freedom, so the greatest crimes against education are those by professional educators, and also, we may add, the greatest crimes against athletics are perpetrated in the name of athletics. In a certain sense the medical profession is the guardian of the health of the community. It, therefore, becomes the duty of every medical man to protest against the abomination of the proprietors of university shows carrying on their business of college-advertising in the name of physiology and hygiene. There is plainly creeping through the popular mind a sneerful suspicion of the very word athletics. It is a poor booby that cannot see that, *e. g.*, golf, or base-ball, has every advantage claimed for foot-ball, and is without almost every one of its disadvantages. The name athletics is becoming scorned, and by the subtle law that governs the changes in the meanings of words is being changed into a term of reproach. With the debauchery of the thing there quickly follows the contempt of the word, and genuine athletics will, by reaction and revulsion, become detested, just as the contemptibleness of the dispensary-abuse is preparing a sentiment that will end in the starvation of legitimate medical charities.

Nowhere is this manifest more plainly than in the rise and luxuriant growth of pugilism and of "athletic" clubs. All over the land in every city there are many, sometimes with one or more thousands of members. In almost every town of any size there is at least one so-called athletic club, the attractions of which consist of almost nightly prize-fights, euphoniously called glove-contests, sparring or boxing matches, not of the members, but of hired professionals. These two subvarieties of athletics, prize-fighting and foot-ball, give nine-tenths of the popular interest in "athletics," and in a little while the word will connote these things principally or alone.

What we wish to make clear is that neither sparring nor foot-balling, as at present carried on, can be legitimately called athletics—and simply because the spectators who are as one-hundred or as one-thousand to one, indulge in no athletics except the laryngologic type. They sit (or stand) and watch the hired men do the athletics. It would be as true to call a theater full of people a school of dramatic art for the spectators. One may see acting or athletic contests all one's life and never become an actor or an athlete.

When we get educators who care either for education or for genuine athletics we shall have something quite different from the present intercollegiate advertising-show variety. Then will physical exercise be subordinated to mental exercise, brawn to brain, and athletics to erudition; then ALL of the students will be encouraged to develop the body in rational and non-injurious ways. We shall then not be witnesses of the disgrace of professional educators egging on the mob of non-athletic thousands to cheer the dozen or two of the show team put in conflict to advertise their college, and to attract students and endowments.

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[1] The famous Yale "Lit." prize was not awarded this year because not one of the essays handed in was deemed worthy of any recognition.

[2] The *New York Herald* of February 24th contains a column-long account of the attempt of the students of Princeton, "among whom were several members of the University foot-ball team," to break up an entertainment of the townsmen given in Odd Fellows' Hall. A fight followed "with beer-bottles, baseball-bats, and fence-pickets, as well as fists;" the "students" were finally whipped. In the same issue of the *Herald* is an account of "a lively battle" at the Bloomington (Indiana) College in which "'Sophs' were taken from their beds and tied to trees, and a student's skull fractured." These things happened about the day Professor Richards was writing that foot-ball had stopped the old practice of hazing.

THE TREATMENT OF EXTRA-DURAL HEMORRHAGE BY TEMPORARY RESECTION OF THE SKULL.

CURRENT medical literature teems with reports of successful intracranial surgery, and abstracts from a considerable number of important operations have recently found place in the Progress department of THE MEDICAL NEWS. As we have already taken occasion to say—in part directly, and in part by implication—the surgery of the brain and the brain-case differs only from the surgery of other parts of the body in the anatomic and topographic relations of the structures, in conjunction with the difficulties of diagnosis. The application of this generalization—in fact, its very promulgation—is but one of many advances made possible by antiseptic and aseptic surgery. When the diagnosis is reasonably clear the surgeon now has almost as little hesitancy in opening the skull for the evacuation of a purulent accumulation, the removal of a neoplasm, or the control of hemorrhage, as if any of these occurred in less vital or deep-seated parts, and the success of such intervention has fully justified the boldness of the undertaking. With growing operative skill, improved technique, increased precision in diagnosis, and maturer surgical judgment, many lives must in future be saved and much suffering averted by a timely application of the principles evolved out of a fuller and riper experience in the treatment of intracranial diseases.

In a recent communication WAGNER (*Berliner klinische Wochenschrift*, 1895, No. 7, p. 137) directs renewed attention to a mode of operating on the calvarium for the relief of intracranial conditions described by him a number of years ago under the designation of temporary resection of the skull, and since by others as osteoplastic resection or trephining, and reports two cases of hemorrhage between the dura and the bone in which the procedure was successfuly carried out, the hemorrhage controlled, and recovery ensued. In both a fracture at the base of the skull ensued from indirect violence, and a hematoma of the dura mater formed in the middle fossa, resulting in the one from a laceration of both branches of the middle meningeal artery and in the other from a laceration of the anterior branch and of the transverse sinus. The diagnosis was arrived at from the presence of typical symptoms of progressive pressure upon the brain, preceded by a characteristic so-called free interval, separating the stage of concussion, without hemorrhage, from that of the actual extravasation of blood.

In the stage of shock the pulse is usually small and frequent, but with the increase in brain-pressure it becomes slow, harder, more tense, and often irregular. As a rule, paralysis of the opposite side of the body appears, indicating that the extravasation is beginning to exert pressure upon the motor area. Convulsions are of frequent occurrence, and may be ascribed to anemia of the medulla oblongata.

The only remedial measure under these conditions is the evacuation of the extravasated blood and the control of further hemorrhage. This should be undertaken as soon as symptoms of pressure make their appearance, as manifested by somnolence and paralysis. In the absence of definite knowledge as to the source of hemorrhage it is perhaps best to remove a flap of bone from the skull in the angle formed by the intersection of a line passing horizontally two-fingers' breadth above the malar bone by another passing vertically a thumb's breadth behind the ascending process of the same bone. Should the bleeding not be accessible from this situation, the opening in the skull can be enlarged. In case the source of hemorrhage cannot be found the wound may be packed and the flap of bone temporarily replaced. At a later day the packing can be removed and the wound leisurely inspected.

A further advantage of the large opening thus permitted is the ease with which a copious extravasation can be evacuated. The use of the mallet and chisel is well adapted to the performance of the operation.

EDITORIAL COMMENTS.

The Cleveland Medical Society, the Code of Ethics, and Sectarian Affiliation.—At a recent meeting of the Cleveland Medical Society the following preamble and resolution were presented, and, after some discussion, adopted:

"WHEREAS, The Constitution and By-Laws of the Cleveland Medical Society provide that any legal medical practitioner is eligible to membership in said Society; and

"WHEREAS, At the last meeting the amendment which was proposed to make the Constitution and By-Laws of said Cleveland Medical Society conform to the Constitution, By-Laws, and Code of Ethics of the

American Medical Association was rejected and laid on the table:

"*Resolved*, That the active membership of said Cleveland Medical Society shall be open to any legal practitioner of this city, no distinction being made in regard to the school of medicine to which said legal practitioner may belong."

The contention was made that the resolution was in conflict with the present Constitution of the Society, which permitted only regular physicians to become members. This difficulty was, however, overcome by the adoption of a motion that the word "regular" be so construed as to mean any legally qualified practitioner of medicine.

We can scarcely congratulate the Cleveland Society upon its action in this matter, for we are unable to see how good can come of affiliation with practisers of sectarian medicine. If honest and sincere in their practice, they must be wrong in philosophy; if dishonest and insincere, wrong in morals. How any reputable regular physician can meet such men professionally, on terms of equality, and to the advantage of the patient, we fail to comprehend. Now, as ever, oil and water will not mix.

While we agree with our excellent contemporary, the *Western Reserve Medical Journal*, that a code does not make gentlemen of those who are not already such, it must be remembered that neither code nor law is needed for the good people of any community. It is for those "upon the fence," as well as the outright bad, for whom restrictive legislation is necessary. As things go, there are a certain number of men, both without and within the medical profession, who require just such restraint as is exerted by the enactment of salutary laws upon the one hand and of an ethical code upon the other. If it were true that "no gentleman in our profession will knowingly consort professionally with a man of evil practices and dishonorable methods, nor will he call in consultation a man inferior to himself in knowledge and experience," there would in reality be no need of a code. Just as true is it that if there were no criminals there would be no need of preventive or reformatory laws. Besides, what course will the "superior" regular pursue when asked to consult with an "inferior" sectarian? It is, further, perhaps, "nobody else's business with whom a man consults," but frail humanity ordinarily judges individuals by their associates and their associations.

The New York State Board of Medical Examiners.—The State Board of Medical Examiners representing the Medical Society of the State of New York has made a report of its work for the year 1894, which contains a number of interesting data. The total number of candidates actually examined was 536. Of these, 470 were examined by the Board representing the Medical Society of the State of New York; 59 by the Board representing the Homeopathic State Medical Society; and 7 by the Board representing the Eclectic Medical Society of the State of New York. Of the first, 316 passed, and 32.7 per cent. were rejected. Of the second, 46 passed, and 22 per cent. were rejected. Of the third, 3 passed, and 57·1 per cent. were rejected. Seventeen candidates were rejected a second time; 6, three or more times; and 54 were unable to secure a license.

It appeared that, whereas prior to 1891 the number of physicians locating in the State of New York was from 700 to 800, there are at present less than 400. The fact, however, that there were 536 applicants is accounted for not only by an increase in the number of medical men, but principally by the fact that the State license has become a matter of such importance that most of the States having boards of medical examiners accept them as licenses to practise, without exacting added medical tests. Under the provisions of the law the Board of Medical Examiners is permitted to indorse as sufficient to practise the licenses issued by other State boards of medical examiners, provided the standards of these boards are not lower than those of the New York Board. Numerous applications from various States were received for this indorsement, but on investigation it was found in each instance that the standard was not sufficiently high to warrant approval of the documents submitted. The Board complains that the preliminary education of medical students and candidates for the licensing degree in the State of New York is not satisfactory. It finds that while the standard is far above that established in other States it is still insufficient and not on a par with the requirements exacted from students of other professions in the State. In accordance with this opinion the Board adopted a resolution declaring that the best interests of the public and of the medical profession would be materially advanced by gradually increasing the minimum requirements as to general preliminary education until no candidate be entitled to matriculate in 1897 at a degree-granting medical school who shall not have completed at least a full high-school course. The public may well congratulate itself upon the outcome of the agitation directed to its welfare and interest instituted and carried to a successful issue by the medical profession.

Dr. Daniel Hack Tuke.—The death of this eminent alienist is announced in the cable dispatches from England. Dr. Tuke was a grandson of William Tuke, the founder of the York Retreat, the celebrated Friends' Asylum, in which, for the first time in Great Britain, rational and humane methods were employed in the treatment of the insane. He was educated at St. Bartholomew's Hospital, where he was a fellow-student with that distinguished Friend and ornament to our profession, Mr. Jonathan Hutchinson. For a time Dr. Tuke was Resident Physician at the York Retreat, but a progressing lung-trouble interrupted his professional work for many years, during which he lived at Falmouth. He kept close touch, however, with his special work, and issued in this period, with Dr. Bucknill, the well-known *Manual of Psychological Medicine*, and the *Influence of the Mind Upon the Body*, both of which were reprinted in this country.

Early in the seventies his health was so far established that he removed to London, where for twenty years he has been an active worker in promoting the best interests of psychology. For many years he was joint editor of the *Journal of Mental Science*, and he has year by year issued many valuable monographs, such as *Insanity in Ancient and Modern Life*, 1878; *Chapters in the History of the Insane in the British Isles*, 1882; *Sleep-Walking and Hypnotism*, 1884. In 1892 appeared the *Dictionary of Psychological Medicine*, which he edited with great skill and care. In 1884 Dr. Tuke visited the United States and Canada, and made a systematic inspection of the asylums of both countries. The results of his visit appeared in a work entitled *The Insane in the United States and Canada*, 1885. He entertained for this country that warm feeling which characterizes so many of the members of the Society of Friends in England, and while here he made himself very popular, and left behind most pleasant memories. He had, in truth, a loving and gentle spirit, zealous ever for the good of his afflicted brethren, zealous always for the honor of the profession. His life affords a noble example of splendid work accomplished under the adverse circumstances of ill-health; and his name will be written (with those of his father and grandfather) among the Abou-Ben-Adhems—those ministers of God to men, who have "in much patience, in affliction, in necessities, in distresses," labored to lighten the heaviest burden of a heavily burdened humanity.

Defective Eyesight and Color-blindness in the Mercantile Marine.—Perhaps even more so than that railway-engineers and other employés on railroads should be free from defects of vision, and especially color-blindness, is it essential that the officers and men on board ship should possess such freedom from imperfect eyesight. Systematic effort is making in England to attain such a desirable state of affairs, and should find ready imitation in all civilized countries. It appears that in the year 1852 the Liverpool Board of Trade issued an order compelling vessels at sea to carry at night bright and colored lights, so as to indicate their position to other and passing vessels. A few years later attention was called to the fact that accidents could not be prevented by this means if the sailors were poor-sighted or color-blind; but a long time elapsed before practical notice was taken of this important observation. It was not until 1877 that the Liverpool Board of Trade promulgated rules and regulations dealing with this question, and new tests were issued to masters and mates in the mercantile marine in 1894. Carried out by competent medical examiners, these tests are in themselves satisfactory; but their usefulness is neutralized by the fact that they become compulsory only when a man enters for a second mate's certificate, instead of when he begins his career as a sailor. The evils of this course are (1) that defective vision and color-blindness may exist in all men in the mercantile marine below the rank of second mate; and (2) that such men, after having spent many years in preliminary work, find themselves cut off from advancement by reason of the discovery of their defect. The remedies proposed are that no one should be allowed to enter the mercantile marine who is not shown by adequate tests to be free from defects of vision, more particularly as regards form and color, and that every navigating sailor should, on going to sea, be compelled to possess and display a certificate of good vision. Other employment should, as far as possible, be provided for those already in the service who happen to suffer from serious defects of vision.

The Children's Aid Society of Pennsylvania.—We cannot forbear again calling attention to the splendid work being done by the Children's Aid Society of Pennsylvania. The work of this organization is not pursued upon conventional lines; the Society has not founded a "home" in which it cares for large numbers of children. On the contrary, its object is the placing of children who have no one else to care for them with families willing to look after them. In the past the Society has, from want of adequate means, found homes for these children in families willing to keep them without remuneration, but experience has taught that better results are attained by an arrangement in conformity with which a certain amount of board is paid for each child, and whose supervision is continued by the Society. The work has already been so well organized that the number of applications for children is in excess of the means of the Society for their disposition. The advantages of the plan seem so obvious as scarcely to justify elaboration. These unfortunates are thus at once removed from influences likely to react unfavorably upon their moral, mental, and physical development, and placed amid others calculated to exercise the opposite effect. Useful citizens are made of those that, uncared for, might go to swell the criminal and defective classes.

The Society has had under its care, during the year 1894, 598 children, of which number, 104 passed from under its care. In addition, 466 women, each having one child, were rendered self-supporting by being placed at service. The Western Soup Society has fitted up a part of a commodious house for the use of these homeless mothers with children, with the object of inducing the mothers to keep their children with them, rather than to surrender them into the care of others. Good places are found for these in families that are willing to take a mother with her infant into their employ at low wages. Temporary lodging, while awaiting situations, is given by the Soup Society, the cost of board being deducted from their wages after the women are placed at service.

The work of the Society is distinctly humanitarian and deserving of the warmest encouragement and support. Charles E. Peterson, 321 South Twelfth Street, is the Treasurer, and will be glad to receive contributions.

More Play-grounds for Children.—The Board of Education of Philadelphia contemplates the opening of school-yards after school-hours, so that children may use them for play-grounds. There is no reason why the brick pavements in such yards should not be removed in order to prevent broken limbs and other accidents which are liable to occur when children are obliged to play in such paved yards.

The movement for breathing-spaces, city parks, and children's play-grounds should receive all encouragement. The majority of children must remain in the city during summer, and the trolleyed streets and filthy courts and alleys are not fit for children to play in.

SOCIETY PROCEEDINGS.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Meeting held January 23, 1895.

"Heredity in Insanity" was the title of a paper by DR. ROBERT H. CHASE. It was pointed out that the most common of all diseases is insanity, and the most common cause of insanity is heredity. In no class of disease is the transmission of a predisposition to ill-health more potent or more evident than in insanity. This fact renders the subject one of the most important in the range of medical science.

The reasons for this great phenomenon are not hard to find or difficult to understand. If the mental and physical traits were not transmissible, then there would be an end to all training and all development. As one writer aptly puts it:

"If the child did not inherit the result of all that had gone before, with additional power of development on his own part, all social growth would be rendered impossible. The torch of civilization is handed from father to son, and, as with the idiosyncrasies of mind, so the very body itself exhibits well-defined marks of its parentage."

Thus it is undoubtedly that there is a great fundamental law of nature that the attributes of the parent descend to the child. This seems to be particularly true of the failings, the defects, the infirmities of the parent.

There have been opponents to this proposition, particularly as regards the hereditary character of insanity. Dr. Bucknill has thrown doubts upon the importance of inheritance and has said that if insanity be so easily transmitted from parent to child, how is it that so many in a family escape? The reply to this argument sweeps it away entirely. First, it is a well-known fact that a new generation may escape entirely, or to a large extent, the mental taint of their progenitors; but who can be certain that the taint is actually absent and not held in abeyance? Second, the study of hereditary transmission of various parental peculiarities shows that heredity is prone to select only certain individuals in a family; take, for example, the peculiarity of the presence of an extra finger or toe. This anomaly may run for many years in a family, selecting only a few individuals, or even one alone in a generation. Third, the more obscure fact in the law of heredity that a tendency may be transmitted from one generation to the third through a second generation which may show no development in the person transmitting it. One of the most beautiful illustrations that we have of this freak of nature is seen in hemophilia, a daughter who is not a bleeder transmitting the tendency to bleed from her father to her son.

When we become better acquainted with this subject of heredity doubtless we shall find that there are well-defined principles by which mental taint is transmitted; already we know that heredity in insanity follows, to a great extent, certain definite tendencies. In this manner insanity may be transmitted directly as far as kind goes, so that the hypochondriacal parent may have a hypochondriacal child, although frequently the inheritance may be altered in form, as a maniacal parent having a melancholic or epileptic child. Another proneness of inheritance seems to be the transmission of the tendency to take on disease under similar conditions, such as age or childbirth. Thus, one family inheritance is a tendency to pass into a state of weakmindedness with melancholy at a certain period of life. Likewise, instances are recorded in which mother and daughter have suffered from puerperal insanity.

In taking up the subject of heredity in insanity in as scientific a manner as our present data will allow, it is well to define exactly what we mean by the term. By heredity, in mental pathology, we mean an original predisposition to mental alienation transmitted to children from their parents.

This definition becomes necessary when we come to study the frequency of the transmission of insanity, for different observers vary in their figures, as a result, we shall find, largely of their variance in the definition of heredity. For example, Marcè claims that we find some antecedent taint in nine-tenths of all cases; Esquirol, on the other hand, found this predisposing cause in one-fourth of 1375 patients whose histories he examined. Figures of other observers vary between these extremes, in consequence undoubtedly of the latitude allowed by the different observers in their search for previous cases of insanity in the families of the patients so afflicted. Those observers whose percentages run very high have included almost any connection by blood, while those whose percentages are lower have limited their examinations to direct ancestors, as parents, grandparents, and great-grandparents. In this dispute the medium course in estimating the number of patients whose insanity is due to inheritance is the safer one. On examining the figures of all the various observers, it is a modest estimate to say that the figures vary between 40 and 60 per cent.

There is a nomenclature in the study of this subject which it is necessary to comprehend to follow it intelligently. Heredity, when it is attributed to parents, is *immediate;* when it is traced from grandparents, having skipped the parents, it is *mediate*. When it has existed for many prior generations it is called *cumulative*. It may be on the side of both parents, in which case it is called *double*, or *from convergent factors*. When it is derived from one parent it is *simple*, either paternal or maternal. According to Esquirol, the latter is the more serious form of the two; it is also three times the more common.

When hereditary insanity appears in the child at the time that it appeared in the parent it is called *homochronous*. When it appears in children before it is seen in the parent it is called *anticipatory*. When the hereditary taint reveals itself by a mental disorder identical with that of the parent it is called *homologous;* when it is modified in passing from one generation to another it is called *dissimilar*, or *transformed*. When it becomes more and more intensified by transmission it is said to be *progressive;* if it is alleviated by a series of fortunate crossings, it is *regressive*.

The forms of mental alienation that are more predisposed to transmission are undoubtedly suicidal, reasoning, and the several forms of periodic insanity; while acute mania and melancholia compromise the family to a much less degree. In pursuance of this subject Dr. Règis' recent work is interesting. This observer has taken up the biologic features of insane families and has developed the theory that heredity in mental alienation presents itself under three morbid types, with clearly defined characteristics:

1. The neurotic, or neuropathic type, which originates in the neuroses and gives rise to neuroses and neuropathic insanities.

2. The cerebral or congestive type, originating in cerebral disorders and giving rise to cerebral affections, complicated, it may be, with insanity.

3. The vesanic type, originating in pure insanities, giving rise also to pure insanities, or vesania.

The special evolution of each of these hereditary types, according to this authority, permits to a certain extent the foretelling to what category of mental disorders the members of a family are particularly disposed. Thus, for example, general paresis does not arise from insanity and does not engender insanity. Like the cerebral diseases, it is born of cerebral affections, and gives rise to the same. It follows that as general paralytics are not descendants of the insane, and do not produce the same, their children escape vesanic heredity; and if they are doomed to any special class of disease by reason of the general paralysis of a parent, it is evidently not to insanity but to cerebral affections of all kinds. Although the biologic study of the family history of the insane of these various types has but recently been touched upon by observers, yet this field is rapidly widening, and it is probable that the day is coming when it will be possible for a physician to formulate in cases of hereditary predisposition scientific rational opinions, not merely a response empiric, so to speak, made solely to reassure the interested parties.

The prognosis when there is a hereditary predisposition to insanity is unfavorable as to permanent recovery; although it may render the likelihood of a primary recovery more probable, yet the possibility of a permanent cure is less probable. Curiously enough, some observers have claimed a higher percentage of recoveries in hereditary cases than in non-hereditary cases —in the table of the Crichton cases, in which in a large number reported the percentage of recoveries in hereditary cases was 36 per cent. to 32 per cent. in the non-hereditary. But the great mass of statistics exhibit the opposite result. Krafft-Ebing has demonstrated the fact that in cases of hereditary disease that were marked by sudden explosions of insanity the prognosis was favorable, while in those that were characterized by a long incubation it was unfavorable. The Crichton cases happened probably to contain a large percentage of the former class. The great tendency of hereditary insanity is to relapse. The diagnostic value of a hereditary tendency to insanity depends largely on its degree. Thus the insanity of one parent would indicate a less degree of predisposition than that of one parent and an uncle, or still less than that of a parent and a grandparent, or of both parents. Again, the insanity of a parent and a grandparent, together with that of an uncle or an aunt in the same line, may be held to indicate a stronger predisposition than even the insanity of both parents.

The significance of the insanity of parents will depend to a large extent upon the period of its onset. The insanity of a parent occurring after the birth of a child, if it arose from a cause adequate to excite it without previous predisposition, would be held, of course, as of no value in the formation of a hereditary tendency.

The insanity of relatives more remote than parents, uncles and aunts, brothers and sisters and first cousins, is not worth anything except in corroboration of nearer and weightier facts. But the influence of other related diseases to insanity occurring in those near akin, such as eccentricity, alcoholism, epilepsy, hysteria, hypochondriasis, vicious or criminal tendencies, etc., may be of great import.

It will thus be seen that the evidence of hereditary predisposition may be of such a character as to render insanity in a patient an event in the highest degree probable; or, on the other hand, it may be so weak as to add a scarcely appreciable amount of probability to the character of the disease.

The treatment of heredity in insanity is, after all, the most important, because the most practical side of the question. Of course, the most decisive way to treat this subject would be to stamp it out by forbidding the marriage of persons so tainted, but unfortunately, as in our syphilitic and tuberculous cases, this is impossible; so our efforts must be directed to preventing the appearance of insanity in such cases, or, if impossible, to ameliorating its condition when it appears. In children of such parents, method, patience, persistent command of temper, self-denying industry, and much knowledge of child-nature are necessary. As to choice between home and school treatment, it is impossible to decide in all cases off-hand. Some do better at home, some do better at school; few will do well at home, however, when it is impossible to be strict without being stern, or to carry out the necessary discipline without setting aside the claims of natural affection. The selection of the proper person to carry out these plans of discipline is by far the most important factor in the early history of the case.

Again, a sound mind needs a sound body; and exercise, food, and raiment exert marked control over the health of these children. Their lives must be a happy medium between the Scylla of over-exertion, over-discipline, over-study, and the Charybdis of the antithesis of these factors.

When the child has become the man, or at least when he comes to be his own master, then is the time of greatest trial. The physical and moral storm of puberty must be encountered, and great temptations have to be met with less guidance. When the outbreak is imminent the problem arises: Should the youth or the man continue or stop his regular occupation? This is a question that cannot be answered without a study of the individual case. In some instances it is better for the patient to do this; in some worse. The only general rule to follow is that if the calling is attended with anxieties that weigh upon the ailing mind, it should either be given up for a time or its burden should be lightened.

Should the threatened patient travel? This is an easy solution of the problem and an error often into which many physicians fall; it is so easy to order the patient away, that it is adopted with more frequency than wisdom. Change of scene may do good, but constant change of scene, with its labors, vexations, and trials, especially in a foreign country, may do much harm. A threatened case of insanity should not be sent to travel without guarantee that proper care and efficient watch will be provided for him. Travel should include due provision for care and protection, the right admixture of rest and fatigue, change and repose. Under these circumstances it may be a very fair thing to try.

DR. MARTIN W. BARR next read a paper on "The Influence of Heredity on Idiocy." Throughout the history of education and of medicine no point has so engaged the attention of the philosopher and the scientist as the influences of environment and heredity. These influences upon our physical being, repeated through successive generations, resolve themselves into a law, a law as unalterable as that of the Medes and Persians—a law founded upon fundamental truths and verified in the experiments of physiologic science.

The aim of educational and medical science is one, viz., to secure to the individual a sound mind in a sound body, so that all that touches one must find its prototype in the other. In this more than aught else, if one member suffer, all the members suffer with it.

This law of balance and proportion we recognize in the forces of Nature, in the applied arts and sciences, and we are quick to note the evil effect of the least deviation from this rule.

In a nature so complex as man's—a mechanism so finely ordered—none can deny that the same principle is but intensified.

Here, therefore, in natural sequence, the *psychologic* follows the *physiologic* research, nay, rather joins hands in this effort to restore health to the mind or to prevent degeneration; and, acknowledging the sins of the father transmitted in the *body* to the third and fourth generations, would fain seek in the springs of life itself the influence of heredity upon the mind—the secret and causes of idiocy. Most arrogantly we call ourselves "the heirs of all the ages" in all good gifts, but we are slow to acknowledge the serpent's trail in our Eden. Our vanity is sensitive, and recoils naturally from the thought of blemish in our own—physical or mental—an ancestry, either ignoble or unfortunate. We do not, and we will not, except under protest, receive the law of heredity of ill.

Convinced that it is logical, still we seek proof in statistics. The gathering of statistics under these circumstances is difficult. Parents and friends are loath to accept such evidence, and, actuated by false shame, still more loath to impart information, especially when there is a neurotic taint. The physician, in many cases, feeling that he is betraying a confidence, keeps no record, and the literature on the subject is, therefore, most meager. Thus, when we begin to sift the matter as we should like, we are frequently unable to verify our conclusions. So in many cases the causes of idiocy remain unexplained, closeted within the secret recesses of nature.

But the field of research, with all its difficulties, is broad and is practically unexplored. Before going into statistics, however, let us consider, for a brief space, opinions of deep thinkers on this subject.

Mercier says: "The first and most fundamental law of heredity is that *every attribute of the parents tends to be inherited by the offspring*. Inheritance is the law, non-inheritance the exception." It will be observed that he does not say they *are*, but that they *tend* to be inherited, and the question therefore resolves itself into this, either the offspring does or does not resemble its ancestors. If the former, then there is an hereditary law; if the latter, there is not.

Strong as this is we find in Montaigne a stronger thought:

"Is it not marvellous that this drop of seed from which we are produced should bear the impression not only of the bodily form, but even of the thoughts and inclinations of our fathers? Where does this drop of water keep this infinite number of forms? And how does it bear these likenesses through a progress so haphazard and so irregular that the great-grandson shall resemble the great-grandfather?"

Blandford says: "Two laws of nature are concerned in the production of these phenomena. One is that peculiarities and abnormalities are apt to recur in descendants for many generations; the other, that there is always a tendency to return to the type of health in beings which have sufficient vitality to perpetuate their existence and carry on their race for successive generations."

We do not always produce an idiot from a neurotic family.

Again, one or even more of a family may be insane or idiotic, the others normal, showing the taint concentrated, as a result possibly of surrounding conditions and temperament of parents at the time of conception, combined with prenatal influences upon the mother.

Thus, every idiotic child bears the mark of some inherited tendency from some ancestor.

I shall here cite a case among my own patients, in which a male idiot, born of imbecile parents, possesses the face and form of the mother, with the disposition of the father, a type of both physical and moral imbecility.

Neuroses are frequently interchangeable in transmission from generation to generation, and there are two great laws—the reversion to the original healthy and perfect type when the taint is less noticeable in generations, until it at last is not found at all; or it becomes more pronounced, and a simple nervous disease may appear in successive generations in the form of a pronounced neurosis.

From Ireland[1] we have the following: "Of all known diseases, perhaps idiocy is most frequently propagated by heredity."

Moreau, of Tours, affirmed that heredity was found in nine-tenths of his cases, but he gave no statistics.

According to George Wallington Grabham,[2] heredity is the chief agent in the production of idiocy. Although in his statistics he collects but 18 per cent., he is convinced that the taint exists in a far greater proportion.

Dr. Shuttleworth, in a recent personal letter, writes: "My opinion is that heredity plays a very important part in the production of idiocy, though we cannot prove the frequency by statistics so completely as the fact is impressed on one's mind by intercourse year after year with the relations of acknowledged idiots and imbeciles.

"Taking only the friends' statements, we should be much misled, and for that reason I declined, when at the Royal Albert Asylum, to publish each year any table of causes. . . . . But as one got to see more of the relatives, one gradually accumulated a considerable body of evidence, and this has been summed up and compared with Dr. Beach's experience at Darenth." These observations are as follows: The most frequent hereditary factor is pulmonary tuberculosis, which is found existing in 28.31 per cent.; inherited mental weakness, 21.38 per cent. (16.47 per cent. family history of insanity, 4.69 per cent. family history of imbecility), whilst in 20 per cent. there was a family history of neuroses.

Fletcher Beach subsequently made some further studies alone at Darenth, and found heredity in 76 per cent. of these cases.

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[1] On the Diagnosis and Prognosis of Idiocy and Imbecility, p. 1.

[2] Remarks on the Origin, Varieties, and Termination of Idiocy.

In 1856 the Legislature of Connecticut[1] appointed a commission to investigate the causes of idiocy. The questions propounded were as to whether there had been idiocy, insanity, blindness, deafness, epilepsy, or any other defect, mental or physical, in the immediate or collateral family of the idiot.

The commission reported that out of 164 cases it found 70 in which heredity was undoubtedly the cause: in 10 cases idiocy in the parents; in 6 in the various relatives; in 6 insanity in parents; in 8 insanity in relatives; in 8 epilepsy in parents or relatives; in 2 blindness; in 1 melancholia in father; in 13 dementia following insanity in relatives; and in 16 one or more of the defects mentioned, but not designated.

In the census of 1873, taken at Berne, 55 per cent. of the idiots came from neurotic families.

Dr. Langdon Down,[2] who has made an interesting series of investigations in 2000 cases, reports 45 per cent. as caused by various neurotic affections in one or both parents. If the mother were afflicted, the first children born were sufferers; if the father, the later children.

Haller cites the cases of two imbecile women of noble birth and immense wealth who married, and many of whose descendants for more than a century, even to the fifth generation, were idiots.

Esquirol,[3] reports the case of an idiotic woman at the Salpêtrière who bore three idiotic children.

Dahl[4] made careful comparative studies of the ancestry of 169 idiots and 151 insane. In the former he found that 84, or about 50 per cent., had insane relations. Among the latter there were 58, or about 38 per cent., whose relatives also presented marked symptoms of idiocy and insanity. Among these the parents of 18 insane and 21 idiots, about 12 per cent., also exhibited some mental defect. Among the idiots there were two cases in which both parents were mentally tainted, six in which the father, four in which the mother, four in which some or all of the grandparents, and five in which the great-grandparents were afflicted with mental disease. It will be noticed that the great-grandmothers predominated in transmitting the taint, but Dahl gives no explanation of this.

Dr. James R. Dunlop reports the case of a weak-minded father and mother who had seven imbecile children. He was so much interested in the case that he made a number of careful investigations. For four generations there had been some evident neurotic taint, but it was not marked in the third. The progenitor was a neurotic, and was married to a fairly intelligent woman. To them were born four children, three males and one female. The female was an imbecile, and had a son, in no way peculiar, born out of wedlock, but whose father she subsequently married. She had no other issue. Of the males, one is reported sane, one feeble-minded, and another eccentric if not imbecile. The last married a healthy woman eleven years younger than himself. They had eleven children, seven of whom were imbecile or idiotic. One, Jean, has had an illegitimate daughter who was said to be normal. One, Thomas, a hypochondriac, was said to be peculiar in looks and manner, but not weak-minded. He married a sensible woman, and had an imbecile child. James, sane, but peculiar in manner, irritable, and fretful, had eight children that were perfectly healthy.

Fletcher Beach also quotes an interesting case in which the predisposition can be traced through four generations: G. B., aged fifteen years, an imbecile, was paralyzed on the left side. Her great-grandfather was not in full possession of his senses. The grandfather was reserved, and the grandmother excitable and peculiar. The father was a neurotic, ill-tempered and morose. The father's two brothers and one sister exhibited no peculiarity, but the oldest children of both brothers exhibited the same peculiarity as the patient (G. B.). The sister's oldest child is also peculiar. From the father springs G. B., whose eleven brothers and sisters died of spasms during dentition. It will be seen by this that the neurosis running through the family touches the third generation but lightly, and intensifies itself in the fourth.

Two family histories of my own patients are interesting studies in heredity:

A. B. was an apathetic idiot. Huntington's chorea has existed in the mother's family for many generations. The maternal grandmother was choreic, the maternal grandfather tuberculous. Of this marriage there were born seven children; the order of birth, ages, and sex were unknown, with the exception of the mother of A. B. Three children are alive and married, and extremely nervous. They have children said to be normal in every respect. The four deceased children, including the mother, died of chorea. The paternal grandfather and grandmother were both strong and healthy, and lived to unusual old age. Their issue consisted of nine children, the sex, age, and order of birth being unknown. All were healthy. The mother of A. B. was always delicate, and three days after marriage was attacked by chorea, of which she died after twenty-three years. She had eight children, the oldest two—male and female—said to be normal. Both are married and have healthy children. The third is a female, and is deaf and dumb; the fourth is a male, and imbecile; the fifth, A. B., is a female, and an idiot. Three children were born after this one, of whom nothing is known except that they died in early infancy of epilepsy, diarrhea, and one was stillborn.

H. W., a high-grade imbecile, was the eighth child, and the first-born of twins in a family of fifteen, nine of whom are dead: four from convulsions in infancy, two stillborn, one from scarlatina, and two, including the patient, of meningitis. Of the six children living, five are said to be normal, and one a shameless harlot, who is practically a paranoiac. Both father and mother came of pronounced neurotic families. The father was peculiar, morose, intemperate, and died in his fifty-first year, of apoplexy. His first cousin was an imbecile. The mother is considered very peculiar.

Howe[1] tells of three towns situated in close proximity to each other in which are a number of families in which both parents and children are imbecile. He tells also of an indigent female idiot living in one town who married, with the sanction of the town authorities, a male idiot, who was not a pauper, with three idiotic children as a result.

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[1] Report of the Commissioners on Idiocy to the General Assembly of Connecticut, 1856, p. 35.

[2] "Causes of Idiocy and Imbecility," British Medical Journal, 1873.

[3] Heredity: Th. Ribot, p. 130..

[4] Bidrig til Kundskab om de Sindssyge i Norge af Ludvig Dahl, Reservelaege ved Gaustad Sindssygeasyl, p. 78.

[1] Causes of Idiocy, p. 78.

Dr. Isaac N. Kerlin, my master in the work, in 1880 presented a valuable paper on the "Causation of Idiocy based upon the Analysis of One-hundred Idiots and Imbeciles." He found that 28 per cent. were caused by insanity and feeble-mindedness, and 57 per cent. by various nervous diseases.

In my own experience, based on a careful examination into the family history of 1044 idiots, I find 397 families, or 38 per cent., with a history of insanity or imbecility, and 225, or about 21½ per cent., with a history of various neuroses.

There is one point so nearly allied to our subject as to demand at least a passing consideration.

Consanguinity is commonly accounted a fruitful cause of idiocy; but comparative investigation shows, first, children having both mental and physical defects, the offspring of healthy unrelated parents; second, perfectly developed children with no personal peculiarities whatsoever, the issue of consanguineous marriages. This would lead us to accept the statement that consanguinity has but little if any influence in the production of idiocy, unless there be some hereditary neurosis.

Heath maintains that if the blood be pure and uncontaminated there will be no bad results from such marriages.

A confirmation of this may be found in the history of the Hebrews, which shows repeated examples of consanguineous marriages, the intermingling of pure blood giving only good results, idiocy being the exception rather than the rule.

The statistics that I have been able so far to gather run thus: In 1865 the population of Batz, Brittany, numbered 3300. Five marriages took place between the cousins-german, thirty-one between second cousins, and ten between those of third degree. The issue of the cousins-german numbered twenty-three children, free from all disease both mental and physical. The second cousins had 120 children, normal in every respect, and the issue of the cousins of the third degree numbered twenty-nine children, also perfect. Two women were sterile. Insanity, idiocy, and nervous diseases were unknown in this community.

Dr. Kerlin found but 7 per cent. of his cases examined directly traceable to consanguinity. In my own examinations of 1044 idiots I find but 3⅓ per cent. On the other hand, consanguineous marriages of persons with the least neurotic taint must always be marked by deterioration of mental power. Naturally, if the taint exist in both parents, the force is but intensified, and idiots are likely to be produced with peculiarities accentuated. A notable example of this is found in Switzerland, where, among the people secluded from the outer world in mountain fastnesses, intermarriage has been going on for centuries. Here, by repeated intermarrying, neuroses are preserved intact and idiocy ripens.

Among my own records I find an interesting case that I herewith present:

J. F., an excitable idiot, was born of cousins-german, in whose families were marked neuroses. The mother was always delicate, and finally died of pulmonary tuberculosis. The father was emotional and silly to the verge of imbecility. The following is an account of their offspring: The family, a large one, numbered eleven in all. Four died in early childhood (from diseases unknown); three are living, but of them I have no history, and of the remaining four I have records. One was the first born, a female, and was deaf and dumb; the next was the second born, also a female, and was epileptic; the next was the third born, a male, and was an idiot; and the last was the eighth born (the patient), and also an idiot.

Frequently idiocy appears as the outward and visible sign of the mental deterioration of a family in which intermarriage has been frequent, especially of one that has been noted for its intellectual qualities, and, according to Griesinger,[1] it is a mark of degeneration in a race whose blood has stagnated, as, for example, in the Asylum of L., where many of the proudest names in England are borne by drivelling idiots.

Esquirol says that it is simply impossible to enumerate the idiots in the noble families of France, among whom intermarriage is frequent, and also among the Roman Catholic families of England and Scotland.

We have considered to-night, not possibilities or chimeric maybes, but grim *facts* gathered through years at much cost and pains, by patient, earnest, thoughtful, philosophic minds. Let us come up from their past with the lamp of experience they have placed in our hands to study the present and verify their conclusions.

What are the signs that tell of this enemy who shall come in like a flood? What standard shall we lift up against him? It is said that the pulse of a nation's prosperity is found in its marts—the danger-signals are read at its bourse.

Where shall we judge of the intellectual status of a nation but in its educational centers. Schools, colleges, universities multiply with unprecedented rapidity over a land that has just celebrated its fourth birthday among the centuries of civilization.

Through these corridors, out from these doors, press in mad haste for the arena of life, young men and maidens, warm blood, freighted in many cases so fatally with the miasma from some remote ancestor, often doubled and quadrupled in intensity by consanguineous marriages, waiting but for this unhealthy and artificial atmosphere to develop into abnormal growth.

Do we ask why are the hopes of fond parents so often blighted? What becomes of these fair buds of promise?

Go find the answer in those other schools that are growing apace in our midst, dotting from ocean to ocean our own fair land, while others stretch out appealing hands to us—schools public and private that offer no prizes, or hope of diplomas, yet that are also multiplying with frightful rapidity in response to the agonized cry of the Rachels weeping for their children, and who will not be comforted, because they are not.

The attention of many medical men is drawn to the influence of intemperance in parents as a cause of idiocy. The statistics, however, are too meager and the statements too unreliable for us to base any definite conclusions upon them. The Connecticut commission found

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[1] Mental Pathology, p. 349.

32.34 per cent. My own experience shows 18.38 per cent. Langdon Down lays special stress upon the intoxicated state of the father at the time of conception, an opinion advanced years ago by Toussenel,[1] and verified in one instance in my own practice.

Ludvig Dahl agrees that to the abuse of brandy by the fathers, and also to some extent by the mothers during pregnancy, may be assigned the most important influence in the production of the large number of idiots in Norway.

Upon the influence of pulmonary tuberculosis, held by many as an important factor, I have not entered, as it is largely embraced in the points already elaborated.

The last example I have to offer, and by far the most appalling on record, is that of the family known as "The Tribe of Ishmael," whose history traced through a period of forty years shows descendants of one unclean, neurotic man, multiplying by consanguineous marriages into two-hundred-and-fifty families, numbering some five-thousand individuals, whose continuous criminal record has poured over the Northwest a flood of imbecility and crime.

Can we, in the face of such evidence, refuse to accept inheritance as one of the fundamental laws of life?

The mark of the beast is ever present—the spoor of the wild animal remains—and to-day we trace it not only to the third and fourth generations, but on *ad finitum*.

Dr. John B. Chapin then read a paper entitled "Heredity, its Relation to Insanity and Idiocy." There has always existed a deep-seated conviction that certain diseases are transmissible by inheritance from parent to offspring. This conviction is strongly fortified by an array of statistics that, if accepted without reservation, might in themselves establish the fact. It is quite common to place insanity and idiocy in this category. So prevalent is the belief that insanity is directly transmitted by inheritance that in medico-legal proceedings it is usual to consider it a strong defence to show that insanity existed in the family of a person charged with crime. So well grounded is the opinion that insanity may be due to a direct inheritance that its existence is the shadow that darkens households, affects plans of domestic arrangements, blights the happiness, and shapes the destinies of a large number of persons. Doubtless the mystery that surrounds the complex operations of the mind, the reported results of observations by physicians, the absolute ignorance of the laws of heredity, beyond the ken of human comprehension, have together conduced to the acceptance of speculations as actual results of well-established facts. Doubtless, religious views, coincidences of events, overworked facts, and ignorance have exercised an influence in the formation of opinions on this subject and their unquestioned acceptance.

That every species produces its kind is a universally recognized law. That there are physical and psychic characteristics that belong to the individuals making up the many nationalities and that are transmitted and preserved from generation to generation; that there are so-called temperaments that have a certain uniformity of physical and psychic development, so that they may be recognized and described, is a matter of common observation. Darwin has also presented the theory "that each of the atoms or units constituting an *organism* reproduces itself."

Heredity manifests itself in family likeness, the hair, gait, height, form, temperament, and physical development. The "atoms or units" proceed in accordance with some uniform law of development, so that, however the stock may be crossed, the rule is that man transmits his exact physical counterpart, subject to modification due to environment, climatic conditions, etc. That the vigor of the stock does not abate is witnessed in the fecundity of the human race.

Whether a similar unvarying law governs the transmissibility of psychic qualities may be a question or in doubt. The same consensus of opinion, however, is disposed to conclude that mental traits are transmitted from parents to children in the same degree that physical qualities are inherited. This is only partly true, but the exceptions are so numerous that it may be considered a chance that the children will possess the psychic qualities of the parents. It has been demonstrated by histories of families in England that strong qualities of mind have been transmitted through generations. On the other hand, this society may be familiar with the history of a family in New York State comprising twelve-hundred persons of several generations, traced by Mr. Dugdale, who as paupers, lunatics, idiots, criminals, murderers, and prostitutes were estimated to have cost the county of Ulster the enormous sum of one-million-three-hundred-thousand dollars ($1,300,000). In making inquiry into the ancestry of a certain family in Yates County, New York, it was ascertained definitely that twenty-two insane persons, criminals, paupers, or idiots could be traced in two generations to an abandoned woman. The influence of marriages of consanguinity deserves a notice in this connection. Dr. S. M. Bemiss collected some statistics that show the nature of the deterioration that may come from this source. Of ten instances of incestuous commerce 31 children were born; 29 were defective, viz., 19 idiots, the remainder epileptic or deformed. Of 823 marriages of cousins, 3942 children were born, of whom 1105 were defective, 145 deaf and dumb, 85 blind, 308 idiotic, 60 epileptic, and only 38 insane. The results of consanguineous marriages furnish an heredity of physical imperfections rather than of psychic disease. Notwithstanding these results, and the necessarily crude notions that commonly prevail, as well as the probabilities they suggest, it must be stated that there is absolutely no unvarying law of transmission established by these reported facts, because of well-known exceptions.

The average normal psychic development is not so often due to transmission or inheritance as to influences of environment, education, the degree of mental receptivity, together with the evolution that goes on from age to age. The quality called genius and knowledge does not seem to be transmitted by inheritance, but a receptive faculty, a capacity to acquire knowledge and evolve ideas, may be an heredity. The term heredity is well defined as "the principle or fact of the transmission of physical or mental qualities or tendencies from ancestors." (Gould's *Medical Dictionary*.) The instances of the transmission of "qualities and tendencies" that have been cited, and those results that sometimes appear after consanguineous marriages, are marked examples of both physical and psychic deterioration, mental and moral degeneration, of mental and bodily failure—increasing in intensity with successive generations, and of those defects that follow such marriages, according to the principle of reversion or degeneration, in a backward direction, even to the extinction of the line of succession. Dr. Seguin observed: "I have not, to my knowledge, ever had to attend an idiotic son of an idiot, or even the son of a man of weak intellect."

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[1] "On sait que les enfants se ressentent généralement de l'influence passionelle qui a présidé a leur conception. La plupart des enfants procrées dans l'ivresse bacchique."—Monde des Oiseaux, p. 106. Quoted by Ireland, Idiocy and Imbecility, p. 27.

An hereditary disease is one that may be transmitted directly from parent to child, Admitting that it is established that certain physical diseases are inherited, can it be shown that insanity should be classed in this category? If it is not an *inheritance*, may it not in certain cases, be ascribed more properly to the results of heredity? And within what limitations? Individual opinions, formed from a knowledge confined to a limited number of cases lead some to a conclusion without further reflection. Psychologic theorizing leads others to collect data to support their views, and a personal element comes to enter in to throw doubt upon the value of any statistics. Hospitals for the insane have contributed their quota, which their medical officers have reported. Thus, Esquirol reported that 0.33 per cent. of his cases were hereditary; Brigham, 0.26 per cent.; Thurnam, 0.32 per cent.; Aubanel, 0.4 per cent.; Burrows, 0.85 per cent.; Hood, 0.9 per cent.; Moreau, 0.90 per cent. These statistics were all compiled prior to 1860, and cover a period of fifty years. What rule was applied in their preparation does not appear. The wide range of results at once suggests a great lack of uniformity of material, wide differences in opinion about what constitutes inherited insanity, and a wide latitude in speculation. Since 1860 the percentum of reported cases of hereditary insanity has decidedly fallen off, although insanity has greatly increased. In some reports of hospitals neither "hereditary insanity" nor "heredity" appears in the list of assigned "causes." In other hospitals the number of cases assigned to heredity has been steadily declining. At the Pennsylvania Hospital for the Insane, among 10,562 cases heredity was assigned as a cause of insanity in eight cases in every thousand. At the Utica (N. Y.) State Hospital, where statistics have been prepared with a considerable degree of uniformity, the annual percentage varies from four to six. While in some of the American hospitals it is somewhat larger than that just named, generally the reported percentage in European hospitals is very much greater than in this country. Possibly this is owing to different social conditions that prevail, in-breeding, debauchery of parents, greater mental and physical deterioration, the lines on which observers have made up their statistics, as well as the tendency to accept and follow views of recognized authorities. Whatever may be the explanation of the differences of reported results, it is apparent that in recent years the tendency is to attach less importance to the assumption that insanity is directly transmissible by inheritance. By many it is wholly ignored as a direct factor in the production of any considerable amount of insanity—at least inheritance is not named as an assigned cause. If the statistics presented had been prepared by observers holding the same theories, and from exactly the same data, there could be but one conclusion—that the inheritance of insanity (if there be such a thing) is rapidly diminishing.

Referring to personal observations, an examination of three-hundred-and-forty seven patients admitted during two years to the Pennsylvania Hospital showed that the probable and direct causes of insanity in one-hundred-and-eighty cases were neurasthenia, or nervous exhaustion from overwork, strain, and worriment; some form of general ill-health; the puerperal state; septic conditions, etc.; and the element of inheritance did not appear or was not ascertained. The remainder were cases of paresis and other forms due to brain-degeneration, senile failure, or organic disease, some with a history of marked heredity. Twenty-seven, or 14 per cent. only, had a family history sufficiently marked to warrant the assumption that heredity was the probable cause of the insanity—that is to say, there had been insanity in parents or along a family line. Exceptionally marked instances of insanity in families have come under my notice, of which two may be briefly presented: Three sisters were brought to the Pennsylvania Hospital on the same day. A brother, said to have been demented, had died about two weeks previously, as was inferred, from gradual inanition and neglect. All had similar delusions of suspicion, of the operation of unseen agencies, which extended to their food, clothing, beds, the air of their rooms. The family history could not be obtained satisfactorily on account of the extreme reticence of all parties. The father had held a high official position under the government. It was an illustration of those cases of rare occurrence in which insanity is communicable in a family, or to persons closely allied in companionship and life, with few relations with the world about them. In this case one sister became insane, and gradually dominated by her superior will-power the other two. From the eccentricities of these people, their isolation and physical appearance, there had evidently been a degeneration, physical and psychic, from the normal family standard.

Recurring to the reference made to three-hundred-and-forty-seven cases, it was stated that in one-hundred-and-eighty-eight the cause in each was directly traceable to some incident in the life of the patient or to a physical deterioration or disease. There were sepsis, loss of body-weight, deterioration in the quality and constituents of the blood. The nutrition of the brain was impaired, and while many thousands of persons suffer in some degree from the same conditions and recover, insanity, which is so often only a relative condition, was but a further incident in the cases cited. In other words, insanity, or mental disorder, as in these cases, was acquired. More than one-hundred-and-forty recovered. Now, will it be said that they had acquired something they could transmit as an inheritance? If so, what was it? Is there anything material, as a bacillus of insanity, that may be received as an inheritance? That a neurotic temperament may be inherited is believed to be in accord with common observation. Such, however is the superstitious, vague sentiment existing in relation to insanity that a fear of contamination is the family skeleton. In relation to the class of cases we are now considering, it is a practice to assure relatives, when recovery does take place, that the probability of a recurrence or of the transmission as an inheritance is no greater than in those persons observed by the physician who have a pneumonia, rheumatism, or fever. Suppose the fact were otherwise, and insanity in some degree was directly transmissible by inheritance, surely man would rapidly deteriorate and degenerate until mental soundness would be of rare occurrence, and in the case of idiots and imbeciles the race would end, as it would cease to procreate.

In the procreation of children, if both parents are of exactly equal potency and not related, the expectancy will be that the physical and psychic characteristics of their children will have a close resemblance to those of the parents. Thirty-one marriages of parties not known to be related or to be descendants of relations produced two-hundred-and-seven children. None of the children was reported to have been born with any defect. (Dr. Bemiss.) If the potential power of one parent is less than that of the other (and this may be the general rule), while the expectancy would be that the offspring would partake of the stronger parent, there is no absolute rule, even here, notwithstanding the probabilities. There is a corrective process in constant operation. That nature constantly eliminates wholly or limits the influence of the weaker element is certainly true, as many families show members of very opposite degrees of psychic development. The reverse is also true, that deterioration is sometimes not wholly eradicated, but continues in an increasing degree. Two persons of marked neurotic organization may transmit their temperament to offspring in a more intensified form, and in the second or third generation, if there is no cross by which it may be by chance corrected, a neurotic heredity or predisposition is established, from which may come, with slight exciting cause, some form of mental degeneration, acute insanity, epilepsy, etc. In-breeding of temperaments, then, rather than consanguineous in-breeding, is more conductive to the development of the neuroses, to eccentricity, and insanity of the degenerative type.

In the discussion of heredity in its relation to insanity and idiocy an attempt is made to show the diversity of facts and views that exists, that there is often a personal element that enters in the preparation of statistics, that there are limitations of our knowledge ; also to formulate an expression of views or principles which are now presented as conclusions :

1. Physical characteristics, those distinguishing the human species, are transmissible as an inheritance.

2. Knowledge, genius, and culture are not an inheritance, but depend rather on influence, education, and environment. Mental receptivity is transmissible. Psychic qualities are not necessarily an inheritance, requiring favorable surroundings and circumstances for growth and development.

3. Insanity as a disease is not transmissible by inheritance, but may be acquired or evolved from a neurotic heredity as a basis.

4. A neurotic predisposition is transmissible by inheritance, but there is no absolute rule that it will be transmitted in any given case, or in any case.

5. In-breeding of neurotic temperaments is most conducive to the creation of a neurotic heredity.

6. Idiocy and imbecility may be a defect having an origin in consanguineous marriages, pre-natal conditions, accidents, arrested development, infantile meningitis, tuberculosis, and lack of potency on the part of one of the parents from unexplainable causes.

DISCUSSION.

Dr. J. Madison Taylor said that the term heredity, as used by speakers, seemed somewhat vague. Even when modified by the term inheritance, and otherwise qualified both in the papers and among neurologists generally, it is by no means clear. In estimating the scope and influence of heredity it is imperative to construe the term much more broadly, and to divide it rather into racial characteristics and tendencies, and the intermingling of these when races fuse (as here in America they do so largely), and then come down to a consideration of the peculiarities of localities and families. One thing is quite obvious from the records of Elwyn and Vineland, especially those made in the past years, that the testimony as to heredity as a factor is made vague and uncertain by many inherent difficulties, not the least of which is the unwillingness of parents to impart exact information. The only way by which this subject can be fairly judged is the very difficult one of systematically sifting all sources of testimony. Americans form a very composite race, which is becoming more so—originally of Anglo-Saxon stock in Virginia and Massachusetts, and between these an admixture of Dutch, English, and Swedes, then in Louisiana French, and now in the great Northwest millions of Slavs. In New York City alone nowadays the foreign element is tremendous, with over a half-million of Germans, four-hundred-and-fifty-thousand Irish, with Jews, Poles, Hungarians, and dwellers in Mesopotamia, "and of heathens not a few." Moreover, within the last quarter-century the character of the foreign element has changed in quality as well as in race. Being the dumping-ground of European refuse, an element of confusion enters in the physiques and characteristics of the American people of startling significance. This offscouring of the nations, representing largely abnormalities of the criminal, insane, and in various ways inferior and unstable constitutions, would seem to threaten the direst results. And yet, such is the vitality and robust vigor of American stock or climate, or social or political conditions, as statistics go to prove, that the evil tendencies that might safely be predicted from these chaotic elements do not result in the increments of criminality and insanity it would be reasonable to assume and fear. It is safe also to assume, upon adequate grounds, that the American nation is steadily improving in bodily, mental, and moral health.

Again, in judging of hereditary conditions, one must compare the tendency of physical diatheses, as of tubercle and scrofula, the toxemias, alcoholism, syphilis, and various phases of environment and education. "No man is ruined except in a line of his own propensities," and errors are always committed along the line of least resistance. When the transmission of qualities is downward and for evil the element for encouragement is never lacking. The function of heredity being the retention and transmission of tendencies, it requires suitable opportunity, and these may give a direction upward as well as downward. Qualities of heart and mind, or body and soul, may be dominant or subordinate, patent or latent, but are inevitably moulded by environment. There are evil tendencies enough throughout the realm of nature, and of sufficient strength to destroy us all, but, unless opportunity and encouragement offer, these may subside in safety. Multiply the safeguards, withdraw the encouragement, improve the environment; above all, raise the standard of self-respect, especially of sobriety, and these dormant tendencies will cease to be, as is proved about us every day. Moreover, even considering those saving peculiarities that dominate the race, and act as equating forces, such as the attraction of opposites, even here the tendency is for good to prevail. When we are better able to study and understand and control environmental conditions, the trend of heredity can certainly be checked, at least the evil trend. We shall be then left mainly with accidental and unexplainable conditions, for even now it very frequently happens that cases of insanity and idiocy occur in which it seems impossible to trace out any adequate cause.

But, lastly, the most important factor of all is evil disease and pernicious habit. Specific disease and nutritional ones, but worst of the lot, alcoholism, chronic or transient, or the pitiable instances of absolute want and insuperable physical conditions, hurtful occupations and vile dwellings: these are remediable, and yet not to be remedied.

Dr. A. W. Wilmarth stated that he is a believer in heredity, and that his opinions are based upon a long experience with the feeble-minded. The parents of the cases that are brought in are often to be found eccentric or feeble-minded themselves. Some of these feeble-minded women produce large families of defective children. A case was recalled in which a woman from Pittsburg had nine feeble-minded children. Another woman was the mother of six microcephalic idiots, and she will probably marry again as soon as her husband dies, and have more of the same kind of children. The degeneracy very often takes on a progressive type, and the marks are more evident in successive children. Two cases at Elwyn illustrate this. One child was brought by its mother, paralyzed in its legs and without the power of speech. It had, however, an intelligent look in its eyes and did not appear to be an idiot. A year later the mother presented herself with a second paralyzed and speechless child, which was an idiot, but with a different name. The father of the first child had died, and the mother had married a man who had not come to that region until after the first husband had died. They were both strong laboring men of ordinary intelligence. This showed that the degenerating tendency had increased in the woman by marriage to a man stronger than herself.

Another illustration is that of a man and his wife, in the town of Attleboro, who had a large family of degenerate children. Two of the children, a boy and a girl, were adopted into different families of respectable people to be brought up. The girl grew up feebleminded and the boy became a thief. He forged a check and ran away to the West, where he married. He had a daughter, who grew up to be a prominent woman in society and church. She had a son, who one night got up and robbed the house and disappeared. She had also a daughter, who grew up to be a shameless harlot. This family for four generations showed the evidence of heredity.

Dr. Barr called attention to the early history of Maryland, where the community was divided into three classes—namely, gentry, servants, and convicts, the first-named with more or less neurotic taint.

Among the gentry, kept absolutely distinct for years, consanguineous marriage was the rule rather than the exception, and we find a large proportion of insane and idiots up to the time of the civil war; this proportion then decreasing as the classes intermingled by marriage.

Dr. Chapin observed that confusion arises from the use and misunderstanding of terms. Inheritance and heredity have been used as synonymous terms. An inheritance is something that one receives from a parent or ancestor —something material that is transmissible—and in the case before us a disease. An heredity is a condition made up of the "physical or mental qualities or tendencies" derived from ancestors. It was pointed out that 65 per cent. of acute cases admitted to one hospital had no inheritance, although many had an heredity—they had inherited no disease from their ancestors, and had no disease they could transmit. The defects of body and mind that come to our knowledge make an impression from the mystery that surrounds all such cases; but we do not in this connection take sufficient account of the large number that show no defect, although there may be defects in the parents. We all know that parents who have consanguineous connections or who are insane have children, some of whom are every way bright and normal, while some may not be. That a neurotic predisposition or a temperament may be transmitted and intensified is established, and this is an heredity that may be a predisposing cause or soil out of which insanity may be evolved. Although conclusions are presented, the subject of heredity is one about which no agreement can be expected, as so much remains a matter of speculation. There is a limitation to human knowledge. It has been stated that the amount of insanity in Europe attributable to heredity is greater than in America. This may be due to the blending of nationalities and the influx of a vigorous physical stock. My own observations and examinations of statistics in the United States would lead to the opinion that insanity may be ascribed to heredity in about 6 per cent. of the admissions to the hospitals, and that neurotic temperaments are transmitted by heredity. Two or three generations of neurotics are sufficient to develop insanity, or, in other words, to lead to such defects that disordered physical actions will appear as a result of progressive mental degeneration. We can hardly conceive of a disease that is acquired, as insanity undoubtedly is in the majority of cases, being transmissible by inheritance. Even coincidences in families do not establish such a fact.

NEWS ITEMS.

High Death-rates in England from Influenza.—The unprecedented death-rate in England, largely due to influenza, and especially severe upon old people, has of late in London reached so high a figure as 38.5, and in Liverpool the frightful rate of 55.5 has been recorded.

The Annales d'Oculistique now appears also in an English edition, under the direction of the American editor, Dr. George T. Stevens, of New York.

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ORIGINAL ARTICLES.

HYGIENE AND TUBERCULOSIS.

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WHEN Professor Koch first announced the discovery of the tubercle-bacillus, and showed that it was probably the exciting cause of all cases of tuberculosis, many members of the profession felt, and all hoped, that a means both of preventing and of curing this hitherto very intractable malady would soon be forthcoming; and when, later, after bacteriology had attained the dignity of a science, and the germ-theory was generally accepted, Dr. Samuel G. Dixon published the results of his work with devitalized tuberculous matter upon animals, and Koch announced some time afterward similar results upon the human system from his work with so-called tuberculin, the belief was widespread that we were on the verge of the solution of the problem. But when further trials of this new agent failed to sustain the promise of the earlier reports concerning it, the rebound of professional opinion carried us backward and probably beyond the point at which it should rest at the present time.

As for myself, I still have abundant faith that we shall ultimately be able to protect and aid humanity to a greater degree than we do now; for not only is this faith strengthened by my experience and work with Professor Dixon, both before and at the time when he first announced that he had been able to render certain animals immune to tuberculosis, but also because both the progress of science and the logic of events seem to be pointing the way in which such immunity will be eventually secured. Accordingly, I have ventured in the present article to sketch what seems to me to be a logical and scientific course by which a practical method of securing immunity from tuberculosis may be discovered, doing this not so much in a spirit of prophecy as to show that we shall probably still have to employ to the utmost all those hygienic measures that we now know to be of the greatest value in the prevention and cure of tuberculous troubles.

It will be well to note that tuberculosis, whether of pulmonary or other tissues, is a disease essentially different in a number of respects from the majority of other affections due to pathogenic organisms. It is chronic rather than acute; it destroys by slowly undermining and sapping the body's strength rather than by quickly overwhelming the vital activities with toxic bacterial products; it is not self-limited or limiting, and it especially requires a predisposing diathesis or condition of the tissues. By this last statement I do not wish to intimate that other germ-diseases are not favored by an unhealthy or abnormal state of the system, or that the rapid inoculation of large numbers of tubercle-bacilli might not produce the disease in a hitherto healthy subject; but mainly to emphasize the fact that though all dwellers in communities must be more or less liable to the reception of these specific germs, only those that have a peculiar condition of the system, whether congenital or acquired, are especially prone to the disease. For example, Bollinger has shown that one cubic centimeter of sputum from a tuberculous patient may contain from 800,000 to 960,000 tubercle-bacilli, and that the average patient throws off from 30,0000,000 to 40,000,000 of such germs per day; Dr. Prudden, of New York, has computed the number daily from a single patient as over 20,000,000; and Dr. Nuttall, of Johns Hopkins University, has demonstrated that in certain cases they may reach the enormous number of 4,000,000,000 per diem. When we consider how few, comparatively, are the tuberculous patients that take pains to destroy or disinfect their sputum, it is not hard to believe that these parasites are present in considerable numbers in our environment, even though we grant that a large percentage of those expectorated immediately experience conditions hostile to their future growth or existence. Cornet and many others have shown that the bacilli are practically always present in the dust from apartments of tuberculous patients; many gynecologists believe that the increase in cases of tuberculosis of the female organs is due to the prevalence of the germs in street-dust; and Professor Dixon and myself have observed them in considerable numbers in samples of dust from certain of our Philadelphia street-cars.

Can we doubt, then, that each one of us takes into his economy at one time or another, either from the air, drink, or food, sufficient of the germs to cause the disease, were he only in the condition necessary to its inauguration?

Moreover, the study of the malady itself seems to indicate that its progression is due not so much to the ravages of the hostile parasites as to the vital weakness of the tissues that should naturally oppose and destroy them.

Consequently, the questions that naturally arise are: What is this precedent condition of the body that is usually necessary for the incurrence of the disease? And is not the true protective immunity and cure each to be had by the securing of a change from this tuberculous predisposition to a more normal and healthful condition? Empirically, we know that this latter is just what happens whenever a patient is really cured of tuberculosis.

But what is the abnormal condition? Evidently one of faulty assimilation and abnormal tissue-metabolism. When we study the causes that predispose to pulmonary tuberculosis and other tuberculous diseases we see at once that they are those that favor faulty digestion of food, improper assimilation, deficient oxygenation of the blood, and, dependent upon all of these, the construction of weak, unstable, and unresisting tissues. And though we may seem temporarily to get good results from the use of antiseptics and other drugs, aimed with destructive or retarding intent at the germs themselves, do we not secure permanent benefits only when we employ reconstructives and use measures that will improve the digestion and the oxygenation of the blood, and that will build up new, strong, and healthy tissues instead of weak and yielding ones? Is it not for this that we carefully watch the diet, prescribe outdoor exercise, and send our patients to other climates?

Dr. T. J. McGillicuddy, in a recent article on "The Dietetic and Hygienic Treatment of Consumption,"[1] says: "To secure healthy, rich blood for the repair of diseased tissues we must have proper food and good digestion." "First, we must prepare the digestive tract and the tissues of the body to receive and assimilate the nutriment, and then we must select the most nutritious food, and so prepare it that it will be readily assimilated. Pulmonary tuberculosis is too often considered to be a local disease and treated as such. We must remember to treat the whole system, which is in a pathologic condition. The diet for the consumptive must be a scientific diet, based on a knowledge of what the different kinds of food do for the organism. This (dietetic) plan of treatment to be effective must be systematically carried out, and both physician and patient must steadfastly avoid that complete dependence on drugs which converts the wisest method of treatment into blind empiricism. There are many factors necessary for the successful treatment of consumption—rest, mental and physical, pure, dry air, gentle exercise in the sunshine—are all important; but these are as nothing if the nutrition does not receive proper attention." Nor should we forget that Pettenkofer and Voit have shown that the absorption of oxygen is determined by the nitrogenous substances comprising the tissues of the body, and that, as Fothergill says, "the presence of nitrogenized structure, and its participation in the action going on there, is a necessary condition for the manifestation of any vital energy or any chemical change in the body."

I have indicated in but a general way the state of affairs favoring tuberculosis. We are not able as yet to demonstrate exactly the condition of each organ in a person of tuberculous diathesis antecedent to the beginning of the disease itself, but I am inclined to believe that a close study of most cases will show that there are primarily imperfect digestion of proteids, abnormal hepatic action, and certain changes, both of kind and quantity, in the nitrogenous products of metabolism. In other words, the stomach and liver are more often primarily at fault than the lungs, though it may happen in some cases that the derangement of the former organs was at least partially due to faulty respiratory action or habits, bad air, imperfect oxygenation of blood, etc.

Just here I would suggest a hypothesis that appears to me, upon rather thorough investigation and inquiry, to be altogether new. May not the condition of the blood, as expressed by its coagulability, be a measure or index of the kind of tissue, as regards firmness and resisting power, which is constructed from it or by the metabolism of the body? The clotting of the blood and formation of fibrin by the antecedent production of fibrinogen, fibrinoplastin, and, possibly, a third substance, seems, at first sight, to be an extremely elaborate and unnecessarily excessive expenditure of energy on the part of Nature to provide for emergencies or conditions that are always abnormal, especially as she is prone to act simply rather than complexly, whenever possible. Why may not the principal purpose of the fibrinogen, fibrinoplastin, etc., in the blood be to assist in the construction of the active and supporting tissues of the body rather than to form fibrin solely to repair lesions of the circulatory system?

In addition, we may note that certain substances which increase the coagulability (*i. e.*, the fibrinogen, fibrinoplastin, etc.,) of the blood have been successfully used to produce temporary immunity, at least from tuberculosis and kindred diseases in susceptible animals, and that their analogues or derivatives are to be found in excess in the blood of those who are of a diathesis the opposite of that which we call scrofulous or tuberculous; while, on the other hand, substances known to decrease the blood's coagulability are very likely to be found in the circulation of those whose digestive functions are of the faulty character that predisposes to tuberculosis. For example, Dr. Dixon has shown, in an article to be mentioned later, that the substances employed by himself, Koch, Vaughan, and others, in their experimental work on this subject are all analogous and more or less closely related to the amid group of metabolic products; while we already know that such substances as nuclein, leucin, tyrosin, glycin, etc., increase the coagulability of the blood,[1] and, *per contra*, that albumoses, products of the imperfect digestion of proteids, decrease and even temporarily destroy the coagulability of the blood,[2] and everyone knows how prone tuberculous patients are to hemorrhages that are difficult to control owing to this lack of coagulability. There also seems to be a very decided relationship between the susceptibility of the various animals, including the healthy human being, and the coagulability of the blood of the respective individuals, though I must admit that there is not so much evidence at hand as I would like to have on this point.

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[1] The Dietetic and Hygienic Gazette, November, 1894

Believing that much more can be adduced in support of the hypothesis suggested, and that it is not altogether a visionary one, I shall hope to be able to discuss it more thoroughly in a future paper. Reverting to our theme, it is essential that we should discover, if possible, the manner in which the tubercle-bacilli inaugurate the disease in a subject predisposed or susceptible to it, and the means or method whereby the predisposition or susceptibility of the whole constitution of that subject may be so altered that the germs may have no power of virulence, growth, or vitality within the system.

As to the former, we know that tuberculosis proper, that is, the formation of miliary tubercles, always begins as a coagulation-necrosis, and as we may consider from the statements and definition of Vaughan that the specific product of the tubercle-bacilli is a nuclein, which latter is one of the class of substances increasing the coagulability of the blood, it is not impossible that the following process occurs in the susceptible subject: A certain number of the bacilli finding lodgment in a certain part of the system, such as one of the alveoli of the lungs, and escaping immediate destruction, owing to the weakness of the body's resisting powers, begin to multiply and to elaborate their special product, at the same time acting as a focus of irritation, and causing a determination of leukocytes to the immediate neighborhood of their nidus. Then, as soon as the toxic product is in sufficient quantity, either acting directly or by inaugurating the reactionary production of a secondary nuclein by the leukocytes, localized and circumscribed coagulation occurs, and the enclosed leukocytes are deprived of nutrition, and are powerless further to oppose the parasites, which, still multiplying, continue the process so familiar to every pathologist. Whether the foregoing picture of the incipiency of the tuberculous process is a correct one or not, the consideration of the means for securing immunity does not depend upon it, for the latter has been shown to be based on the antecedent condition of the system rather than on the actual processes of the disease.

The fact that such investigators as Dixon, Koch, Vaughan, and others have been able to secure a condition of immunity in many susceptible animals is proof that we shall ultimately be practically successful with the great mass of human beings. To the objection that some may raise, that the conditions are not the same in the two classes of subjects, I think that, following out the thought suggested in the foregoing coagulability (?) hypothesis, it can very likely be shown that the difference, whatsoever it may be, is one of degree rather than of kind.

The first thing to be noted is the close relationship existing between the agents employed by all those who have obtained notable results, and of these agents to the nitrogenous products of normal animal metabolism. As Dixon was the first to secure anything like immunity to tuberculosis in animals—I myself having seen him do this almost if not wholly a year before Koch's announcement of his work with tuberculin—so he was the first, I believe, to show that there might be produced from cultures of the tubercle-bacilli a substance strongly resembling certain well-known nitrogenous products of metabolism, and that these latter would give, when injected into both healthy and tuberculous subjects, closely similar results to those obtained by the injection of his protective material and the practically identical tuberculin.[1] More recently Vaughan, who is using the nucleins of yeast-cells and of the spleen in this work with apparent success, has shown that the nuclein-bases yield bodies of the xanthin-group, which latter, in turn, are very closely related to the amid metabolic group of which I have just spoken.

In this connection it will not be out of place for me to call attention to Dr. Dixon's most recent and extremely interesting article on "The Possible Relationship Between the Tubercular Diathesis and Nitrogenous Metabolism,"[2] in which he not only considers this relationship much more fully and thoroughly than I could venture to do at this time, but also proposes a line of experimentation which

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[1] Waller's Human Physiology, 1893, pp. 19–20.

[2] Ibid., p. 23.

[1] Vide proceedings of the Academy of Natural Sciences, November 18, 1890, and February 21, 1894. Also, the Times and Register, September 26 and October 17, 1891.

[2] Therapeutic Gazette, December 15, 1894.

I feel would yield valuable and interesting results if carried out. He has even gone so far as to suggest "that it might possibly be advisable to endeavor to produce a temporary condition of gout or lithemia in our tuberculous subjects, hoping thereby to possibly supply that in which the pathological tissues are deficient or to alter the condition of the tissues either in kind or degree—to change the soil, as it were, so that either the hostile pathogen could no longer find in those tissues a suitable nidus, habitat, or environment, or that the vital activities and resisting agencies of the body would be increased and strengthened sufficiently to overcome the disease-germ before it could multiply and produce its harmful effects in the body." It is also interesting, inasmuch as many now believe the therapeutic efficacy of cod-liver oil to be dependent upon its alkaloids, to note that three of the latter closely resemble urea in structure and formula, and that the other three are closely related to a combination of the glycerin and amidogen radicles.

By this I do not mean to create the impression, any more than does Dr. Dixon, that by the use of the amids results or reactions are to be obtained exactly similar to those due to tuberculin ; for the latter, being a specific product of the bacilli, most probably causes a specific action in those cells and tissues that react to it, just as the diphtheria-antitoxin of Behring and Roux is produced only by the influence of the peculiar product of the diphtheric bacilli.

With this evidence, and granting that the opinion expressed in the earlier part of the paper, that in most cases of predisposition there is "primarily imperfect digestion of proteids, abnormal hepatic action, and certain changes of kind and quantity in the nitrogenous products of metabolism," is well founded, it certainly is not difficult to surmise a connection between these various amid substances, all more or less closely related, and the metabolic activities and functions concerned in the production of a predisposing diathesis.

We have as evidence of the manner in which the inoculation of these toxins, nucleins, etc., secures or induces protection the work of Buchner, Nuttall, Vaughan, McClintock, and others, which goes to show that the inoculated substances incite or stimulate the leukocytes, and possibly other active cells of the body, to the elaboration and secretion into the blood-serum of secondary nucleins, antitoxins, alexins—call them what we will—which are not only germicidal but also antagonistic and, as it were, antidotal to the bacterial poisons. This is the principle underlying the new serum-therapy, which is apparently proving itself so successful in the treatment of diphtheria, tetanus, etc., and we may thus the more readily accept the reports of Viquerat's success in gaining immunity from tuberculosis by the use of the serum of asses, though even in his case it will doubtless be found that, like Dixon and Koch, he has for his primary agent the toxin or nuclein of the tubercle-bacilli.

From this point we may take one step further, to inquire into the physical nature and structure of the cells secreting the protecting alexin, and then we must wait for light to be shed in the future upon the still hidden processes of the body. Bütschli has arrived at the conclusion that the framework of protoplasm must be "a fluid substance insoluble in water," and that "it must be formed by a body which has arisen from a combination of albuminoid and fatty acid molecules ;" while Reinke believes that this so-called *plastin* is a "combination of albumin and *nuclein*, possibly further accompanied by a number of molecules of a fatty acid belonging to the stearic or oleic acid series."[1] The connection between this and what has already been said about protective nucleins (alexins), and also in relation to my hypothesis regarding the constructive functions and processes of the body, must be obvious to everyone.

In the foregoing I have tried to collate and arrange logically the knowledge that we already possess concerning this important question, and though it is difficult to place the facts in their proper order, and the proofs of some of them may not be so positive as we should like them to be, I trust that I have made clear the points in question, viz. : That a predisposing condition is essential to the inception of the disease ; that immunity has been produced by a number of investigators in susceptible animals ; that the substances thus successfully used are very analogous one to another ; that they probably act by stimulating the leukocytes and other active cells of the body to the production and secretion into the blood-serum of nucleins or alexins which tend to neutralize the bacterial poisons, and that these agents, favoring immunity, also increase the coagulability of the blood, which being decreased in the tuberculous condition and for other reasons given, may possibly be important as an index of the formative or constructive powers and processes of the system. I also hope the paper may serve to indicate the direction in which we can reasonably look for further advances in this important matter. But, though there is fair promise for future success in the protection of humanity against tuberculosis, we must not forget that whether this be attained through the inoculation of tuberculin, nucleins, serum, amids, or, possibly, other substances that will increase the formative and constructive powers of the blood and tissues, there wil always be prime necessity for the additional and assiduous employment of those broad hygienic measures, such as exercise and life in pure air, respiratory gymnastics, freedom from mental worry or fatigue, improvement in gastric and hepatic digestion, etc.; and I do not go too far, perhaps, in saying that without these latter the use of inoculatory methods alone will probably prove illusory and far from satisfactory. In other words, it is the predisposition rather than the attacking pathogen that needs attention, for with the former wanting the latter will be impotent for evil under all ordinary conditions. By this I would not deprecate the use of protective inoculations in all predisposed or incipient cases as soon as the proper substances and the means of using them shall be surely known; but simply advise against the error of placing sole reliance upon them to the exclusion of what must always be of paramount importance.

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[1] Bütschli : Protoplasm and Microscopic Foams.

ANESTHETICS IN THE EARLY AND MIDDLE AGES.[1]

By R. HARCOURT ANDERSON, M.D.,
OF NEW YORK.

AN anesthetic may be defined at the present time as any agent that will produce anesthesia, which condition, according to Wood, is loss of consciousness produced or accompanied by loss of sensibility or diminished muscular action. As to how this is brought about, the various theories are too numerous to entertain here. It will suffice to say that the action of such an agent is undoubtedly through the nerve-centers. A few of the plausible theories are: Partial arrest of oxidation; precedent physical changes in the blood, due to cerebral anemia (like sleep); the well-known theory of Claude Bernard, that it is produced by semi-coagulation of the nervous protoplasm.

Many, if not all, anesthetics have the power of dissolving the red blood-corpuscles, and as Ludimer Herman stated in 1866 that protagon, which constitutes the stroma of the red blood-discs, is an important constituent of the nerve-centers, and as death would necessarily occur before this could be dissolved out of the nerve-centers, *i. e.*, before it could be dissolved out of the red corpuscles, the evidence is that no extensive destruction of the latter bodies can occur from the action of an anesthetic and the subject survive. It is interesting in relation to our modern information on the subject of ptomains and toxemia that Herman states that bile-acids also dissolve protagon, and experiments made by him seemingly indicate that they have anesthetic properties. This ingenious theory of Herman has not, however, been entirely proved.

Regarding Claude Bernard's theory, from a conclusive standpoint, we can only apply the term "assumptive" to it. It seems that the lungs are simply avenues through which the anesthetic passes on its way to the central nervous system by means of the blood, and that, other things being equal, if the same condition is produced through other avenues than the lungs the condition will be the same so far as surgical utility is concerned.

In the hurry and rush of this nineteenth century we are continually losing sight of agents that have been valuable in more senses than one to our predecessors. Among the most important of the drugs used for the production of anesthesia by the ancients is atropa mandragora or mandrake, which somewhat resembles the atropa belladonna of the present day, but this drug is not identical with our mandrake. It has been fully described by Dioscorides, and later by Pliny, the former stating that wine of mandrake was used in cases of amputation or of cautery, to prevent pain, and speaks of the pure juice used in the form of a suppository to induce sleep. Pliny says: "Mandrake is taken against serpents, and before cutting and puncture, lest they be felt. Sometimes the smell is sufficient." According to Apuleius, half an ounce of the wine would render a person insensible even to the pain of amputation. This preparation was used extensively by the Grecian physicians, and known to them as "morion." According to Lyman, the Biblical expression found in the 15th chapter of Mark, verse 23, "Wine mingled with myrrh" (which was offered according to the custom by pitying souls of that day to Christ on the cross) was unquestionably the same anesthetic wine.

That the ancients also understood the use of combining drugs is shown by the following quotation from Dioscorides, mentioning the method of preparing the sleeping apple: "Opium, mandragora, juice of water hemlock, and the seeds of hyoscyamus and musk; the apple (so he states) when repeatedly smelt softens down and binds the eyes in sleep." The juice of the root of fenugreek or trigonella fœnum was applied to the nostril to bring the patient back to consciousness. He also says physicians used this when they were about to burn or cut. Galen refers to its power to paralyze sensation and motion. According to Paulus Ægineta, Isodorus writes: "The wine of the drug of the root is given to those about to go under an operation that, being asleep, they may feel no pain." Serapion says that it is administered as an anesthetic prior to operation. Again, Theodorica, the famous surgeon of the school of Bologna, was in the habit of using a combination of hyoscyamus, hemlock, lettuce, ivy, mandragora, belladonna, and opium. This was administered upon a sponge previously saturated with hot water, used before operations, the patient being aroused by instilling the juice of rue in the ear. We can still see traces of this practice of ear-instillation in Shakespeare's death of King Hamlet. Mandragora was also used to avoid the pains of labor.

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[1] Read before the New York County Medical Association November 19, 1894.

Our predecessors were enabled to bring the preparation of so-called anesthetic drugs to greater perfection after the introduction of the process of distillation by the Moslems, and William Bullein, a celebrated anesthetist, who lived in the reign of Henry VIII, described the preparation of his anesthetic mixture as "the juices of a certain herb pressed forth and kept in a closed earthen vessel, according to art (probably distillation), bringeth deep sleep and casteth man into a trance or deep terrible sleep—until he shall be cut of the stone."

In the writings of the poets we see innumerable references to anesthetic drugs. Shakespeare says:

CLEOPATRA: "Give me to drink mandragora,
That I might sleep out this great gap of time,
. . . . . .
My Antony is away."
Antony and Cleopatra—Act I, Scene 5.

IAGO: "Not poppy, nor mandragora,
Nor all the drowsy syrups of the world
Shall ever medicine thee to that sweet sleep
Which thou owdst yesterday."
Othello—Act III, Scene 3.

and in more modern times Mrs. Browning says:

"Have the pigmies made you drunken,
Bathing in mandragora?"
Dead Pan, II.

And finally a French writer says, "Like a patient sent to sleep with mandragora, I do not feel my disease."

Sir B. W. Richardson, of England, about 1873 demonstrated unquestionably the anesthetic properties of mandragora.

Wood says, "I know by experiment that vapor of alcohol is capable of producing the stupor known as anesthesia, and, further, that this may be deepened into death accompanied by the phenomena of fatal ether-narcosis." About the twelfth century Albertus Magnus wrote about a liquid which he called aqua ardens, which was obtained by distillation from a mixture of the following: Red wine, quicklime, common salt, and green figs. By dissolving this we undoubtedly would get a concentrated alcohol with perhaps a little more than a trace of ether. This aqua ardens was used for the production of anesthesia.

The Chinese used cannabis indica or a drug closely allied to it for the prevention of pain during the operation of acupuncture.

Herodotus states that in early times anesthesia was produced by inhalation of bhang or hasheesh, even before the use of mandragora, and it was used for the express purpose of operative procedure. He also states that the Greeks were familiar with the use of the drug. Literature on the subject also shows that the Scythians were in the habit of producing intoxication by means of inhalation of the vapor of hemp, and experiments made by Prof. Wood, of Philadelphia, on himself, show undoubtedly that this drug will produce unconsciousness for a certain time.

It is probably well known that Dr. Esdaile (according to Mr. James Braid) performed upward of three-hundred capital operations in India, many of them of the most terrible nature, without pain, using hypnotism as an anesthetic; and in 1829, Cloquet ablated the breast of a woman without pain, while in a hypnotic state. A similar process was known among the early Greeks, "touching them with his hands, he (the physician) quickly makes them whole." And we see here the connection in the laying on of hands (in some of the ceremonies) of the Greek and Latin Churches, notably the extreme unction of the Roman Catholics. Another means of producing anesthesia was that of the ancient Assyrians, who alleviated and even entirely prevented pain incident to circumcision by compressing the veins in the neck, and also probably the carotids, producing cerebral anesthesia.

Comerarius, writing A. D. 1625, says that anesthesia may be produced by means of a gas obtained by treating certain drugs in vessels.

Boerhaave, in one of his Aphorisms, shows the use made of volatile oils according to this prescription:

R.—Oil of cinnamon	gtt ij.
Oil of cloves	gt j.
Citron peel	gr. ij.
Sugar	ʒij

M. et adde red coral, prepared, ʒj; pure opium, gr. ij. Mix for two doses, one to be taken an hour before the operation, and the other fifteen minutes before, if the patient be awake.

Guillaume de Sallaste Du Bartos writes in 1544:

"Even as a surgeon, minding off to cut,
Some useless limb, before in use he put
His violent engines on the vicious member,
Bringeth his patient in a senseless slumber,
And griefless then (guided by use and art)
To save the whole, cuts off the infected part"

Boccaccio, in the story of Dioneus, gives an account of the anesthetic mixture of Surgeon Mazzeo de la Montagnos.

Moore, of England, 1784, tried to produce the effect of anesthesia by means of clamp-like devices which pressed on the nerve-stems of the extremities about to be operated upon, and, as every one is well aware, in 1799, Sir Humphry Davy discovered the intoxicating effects of nitrous-oxid gas, which led to the discovery and use of the modern alcoholic series of anesthetics.

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243 WEST TWENTY-FIRST STREET.

INTRA-ABDOMINAL SHORTENING OF THE ROUND LIGAMENTS FOR RETRO-DISPLACEMENTS OF THE UTERUS.

BY MATTHEW D. MANN, A.M., M.D.,

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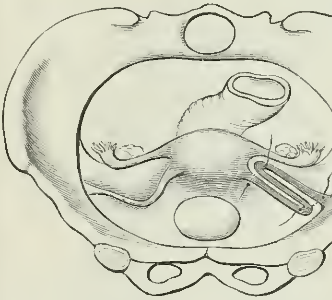
THE treatment of posterior displacements of the uterus by operative procedure has come to be recognized as, under certain conditions, fully justifiable. The plans followed by most operators in this country may be grouped under two heads:

First. Those having for their object the shortening of the round ligaments outside of the abdomen (Alexander's operation and its modifications); and, secondly, those in which either the uterus is fixed to the abdominal wall, or the round ligaments are shortened between the uterus and the sides of the pelvis within the abdominal cavity.

Of Alexander's operation I have nothing to say. It has its advocates, while there are many who unhesitatingly condemn it. My experience has not been sufficient to allow me to give an unqualified judgment. I, therefore, refrain from giving any. As regards ventral fixation, it has always seemed to me to induce an unphysiologic condition. The uterus is not normally attached to the abdominal wall, and it is hard to understand how attachments made in this way can take the place of the natural supports. I have, therefore, always preferred an operation that accomplishes the shortening of the round ligaments from within. A number of plans have been suggested, notably those of Drs. Polk and Wiley. I have no new plan to suggest, but simply a modification of one of the old ones. It is not necessary for me to review the various steps by which I arrived at the procedure that I now follow, but I shall at once describe it:

First. A moderate-sized opening is made in the abdominal wall. Any adhesions that may bind down the uterus are broken up, and diseases of the tubes or ovaries that may demand attention are properly treated, either by the conservative method or the diseased organs are removed. The patient is then placed in the Trendelenburg position, a large, flat sponge spread over the intestines, and the uterus pulled up as near the abdominal wound as possible. By pulling the uterus to one side the round ligament on the opposite side is put more or less upon the stretch, and made distinctly visible. The ligament is then seized with two long-handled hemostatic forceps, the points of seizure dividing the ligament as nearly as possible into three equal portions. A little lapping over of the parts and comparing will tell whether the division is equal or not.



The next step consists in passing a needle threaded with silkworm-gut through the loop nearest to the abdominal wall, the needle being then made to pass under the point where the round ligament is inserted into the uterus, a considerable quantity of uterine tissue being included in the suture. The hemostatic is then removed, and the loop of ligament tied to the uterus. It is necessary when the ligature is first pulled that it should not be drawn too tightly; but the second half of the knot should be tied as tightly as possible in order to prevent slipping. The ordinary square knot is the one used. The ends of the silkworm-gut are cut off quite close to the knot. A second stitch is passed through the ligament just as it leaves the abdominal wall, and then through the loop in that portion of the ligament nearest to the uterus. The ligature is tied and cut as before. In this way the ligament is doubled on itself twice, and three thicknesses of round ligament are stretched between the sides of the pelvis and the front wall of the uterus. The same thing being done on the opposite side, the wound is closed as usual. Reference to the cut will make it clear.

The material used for ligature may be silkworm-gut, as I have indicated, or ordinary silk. I prefer the former, but have sometimes used silk. I have performed the operation many times—upward of thirty—and have never seen any harm resulting from the silkworm-gut. It seems to me better to use a ligature that will not be absorbed, and to trust to its sustaining power, rather than to use an absorbable ligature and trust to adhesions alone. The adhesions will, I believe, eventually be absorbed and the end of the operation defeated.

The point at which the needle should pierce the ligament is of some importance. The artery runs just below the ligament, and if it be included in the ligature harm might result. By penetrating the ligament so as to include about two-thirds in the grasp of the needle the artery will certainly be avoided.

The results of this operation in my hands have been eminently satisfactory. I have seen but one failure, and in this the failure was only partial, there being a certain amount of prolapse and very slight retroversion. The uterus was very large and heavy. It was one of my earlier cases, and the operation was not performed exactly as I have described. The uterus was easily held up by a pessary, and the patient is perfectly comfortable, though, unfortunately, compelled to wear the support.

The advantages that I claim for the operation are, in the first place, that it cannot primarily fail. One is perfectly certain of finding the ligaments and of shortening them to any required degree. Secondly, the uterus is left in its natural position, and supported by its normal ligaments. There are no loops or holes for intestines to enter, thus causing intestinal obstruction. Should pregnancy occur the uterus is left free to move and to rise, as may be required. By the use of a non-absorbable ligature the result is likely to be permanent. The only way failure can result is through the cutting out of the ligature, and if it is not tied too tightly this is very unlikely to occur.

The indications are as follows:

1. Whenever the lower portion of the abdomen is opened, in the case of retro-displacement, for any object whatsoever.

2. When the retroverted uterus is adherent.

3. When there is coincident disease of the appendages.

4. In simple cases when a pessary does not accomplish the desired result, and when the operator prefers this operation of Alexander's.

The objections to the operation are that it opens the abdomen for what may seem a comparatively unimportant disease, the dangers being those inherent to any celiotomy. The actual dangers to life are, in my opinion, so trifling as to be scarcely worthy of notice. Nor are they greater, I believe, than in Alexander's operation. There are cases recorded in which Alexander's operation has been followed by peritonitis and death,[1] and in many instances the peritoneal sac has been opened in peeling it from the ligament. A properly performed celiotomy is as little dangerous as almost any operation that is performed under an anesthetic.

The real objection to my mind is the presence of a wound in the abdominal wall. That this is a real objection cannot be denied. The dangers of abscess, of ventral hernia, and adhesions of intestines causing obstruction are very real, and I must confess to having met with all of them more than once. Their infrequency, however, when the operation is carefully performed, so far diminishes the risk that they ought not to count very heavily. If, for instance, we compare the operation with Alexander's operation, there is an equal danger of suppuration, almost equal danger of peritonitis, and unquestionably, if Alexander's operation is performed by opening up the inguinal canals, there is a danger of hernia, a fact that has been observed.

I do not wish to compare this operation with Alexander's operation, but merely to show that it is not in reality much more dangerous. When the abdomen has to be opened these objections all vanish, and it remains to my mind the best operation yet proposed for sustaining the uterus in its normal position. The tendency in these days is to give up the abdominal incision, making all operations *per vaginam*. A great objection to this mode of operating is that with it, as yet, no thoroughly reliable method of fastening up the retroverted uterus has been invented. Dr. Polk, I know, has reported some cases in which a suture was passed through a partial abdominal incision into the fundus. It seems to me that this cannot be relied upon for certain success. Adhesions formed in this way will, I am sure, soon be absorbed, and the uterus be allowed to drop back as badly as before. Doubtless some method will be invented to overcome this difficulty; but, until it is done the advantages seem to me to lie with celiotomy when retroversion exists.

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[1] British Gyn. Journ., November, 1894, vol. x, p. 408.

It may be objected that the amount of shortening of the ligaments by this plan will be too great. I can only answer that I have not found it so. The ligaments in these cases are always greatly relaxed. Moreover, they are elastic, and will bear the necessary stretching very well.

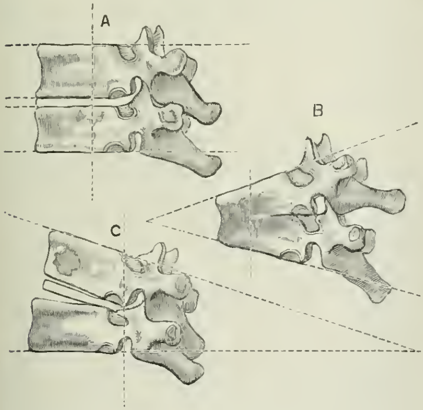
In conclusion, I can only ask that the operation be given the test of experience. I am sure it will be found easy, certain, and effective.

AN ORIGINAL METHOD AND APPARATUS FOR APPLYING PLASTER-OF-PARIS JACKETS IN POTT'S DISEASE.[1]

BY R. TUNSTALL TAYLOR, M.D.,
OF BALTIMORE.

MY aims in this apparatus have been, first, to put the patient in as comfortable a position as possible, in which, at the same time, he can keep reasonably quiet while the jacket is being applied; and, secondly, that the position shall be such as to elevate the ribs and cause a backward bending of the spine, producing a certain degree of lordosis, involving both the dorsal and lumbar regions. This is done in order that the center of gravity of the spine may be thrown further backward and the superincumbent weight be removed, more or less, from the diseased body or bodies of the vertebræ, to the healthy transverse and articular processes (Fig. 1, A, B, and C).

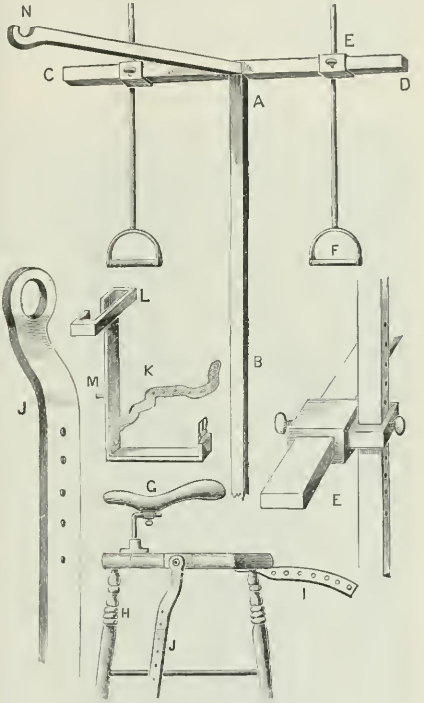
FIG. 1.



Diagrams showing:
(A) Normal position of adjacent vertebræ;
(B) Falling forward of the vertebral bodies in caries of the spine;
(C) The aim of treatment of Pott's disease by means of spinal extension in its true sense;
—— —— —— = The planes of the vertebral bodies;
– – – – – – – = The line of the center of gravity and of the superincumbent weight.

The first of the aims, a comfortable seat, is met by utilizing a stool (Fig. 2, H), on which is fastened a bicycle-seat (G), taking up no space laterally.

FIG. 2.



Diagrams showing the details in the mechanism of the Taylor plaster-jacket stool. (See text.)

The feet are supported on stirrups (K), made adjustable by a sliding-joint and pin (L and M). This sliding-joint works on a rigid rod (J), which in turn can be moved through an antero-posterior arc, so that the legs of the patient can be put in any desired position, by means of a bolt which passes through the arc and rod.

The second aim, that of the production of lordosis, is met by having an upright (A B), which extends some distance above and behind the patient's head, and has a cross-bar (C D) on its top, making a T. From this cross-bar descend rods (E F), on which are handles (F). These rods are made adjustable at the cross-bar for long or short arms, broad or narrow shoulders, by a double joint (E), by which they can be moved up or down, and also sideways. The central upright is attached near the bottom of the stool behind, by a joint, which allows motion in an antero-posterior direction, regulated by a set-pin and arc (I) which project back from the seat. Thus it will be seen, when the patient grasps the handles, his arms being stretched upward and the central upright is moved backward, the pelvis being more or less fixed, the result is that the ribs are raised and the shoulders and spine are curved backward. (Fig. 3.)

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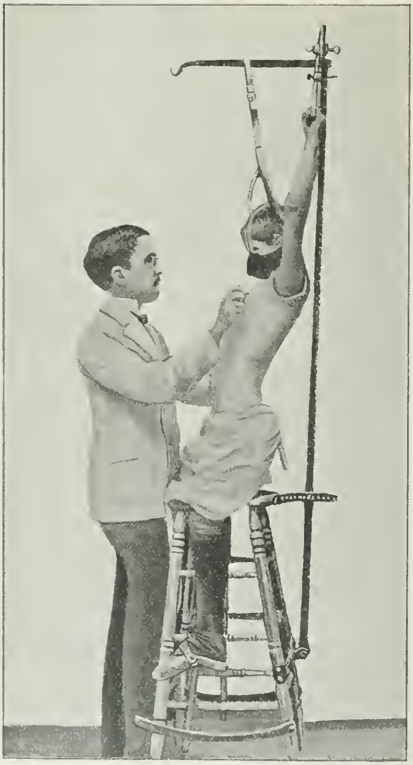
[1] Paper read and the apparatus shown to the Johns Hopkins Hospital Clinical Society, January 20, 1895.

FIG. 3.



The application of the jacket on the stool.

Then the jacket can be easily applied and carried higher up and closer over the sternum than is possible by other methods, an end which we wish to gain in all jackets for Pott's disease, thereby preventing, as far as possible, the forward bending of the spine, and with it compression of the diseased vertebral bodies.

Thus far the advantages presented by this apparatus seem to me to be:

1. The jacket thus applied fixes the spine in the most advantageous position for lessening the tendency for the production of deformity, and when a plaster jacket is indicated for any reason in preference to a steel back-brace, this method I have found the most efficient in applying it.

2. The rapidity and ease with which a jacket may be applied, an advantage of no small moment in a crowded out-patient plaster-room. These jackets require, as a rule, no trimming at the crease of the groin in front or in the axillæ, notwithstanding that they are carried high up on the sternum.

3. It seems applicable to dorsal and lumbar caries, especially the former. In high dorsal caries (*i. e.*, in disease above the seventh dorsal) the jacket should be supplemented by a "head-support."

4. It seems comfortable to the patient, as the thorax is well supported and the superincumbent weight is removed from the diseased vertebral bodies to the healthy articular processes and hips.

5. It is not an expensive apparatus.

I wish especially to emphasize the importance of the rigid supports for the hands and feet in this apparatus, as swinging ones were tried and found unsatisfactory.

Certain precautions are necessary for the successful application of a plaster jacket by this method:

1. To avoid fatigue to the patient, the arms need not be elevated after the handle-rods and uprights are adjusted, until just as the plaster rollers are to be applied, which, although but a question of a few minutes, will be found a point worth noting clinically.

2. To insure a close-fitting jacket over the pelvis, it is well to have the legs fully extended on the stirrups.

3. To avoid breaking up adhesions that may have already formed in partly ankylosed spines, it is not advisable to carry the backward bending to a point where discomfort is produced, which should be our guide in fixing such cases.

Finally, in many cases to apply a comfortable and successful jacket, a forward projecting-rod is fastened to the central upright (Fig. 2, N), from which a head-sling extension can be used to insure additional support and steady further the patient when restless, nervous, or in pain.

2000 MARYLAND AVENUE.

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IS THIS THE NINETEENTH CENTURY?

BY RICHARD SLEE, M.D.,
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THE interesting article on physio-medicalism, by Dr. Nichols, and the bright and overflowing editorial in lieu of a review on the "Essentials of Homeopathic Therapeutics," in recent numbers of THE MEDICAL NEWS, have tempted me to bring to the notice of the profession a school of medicine with which few of my co-workers are probably familiar. Perhaps the quickest method of explaining will be to report several cases bearing on the treatment.

CASE I.—I was recently called to attend a young man who had an incised wound on the dorsum of the foot from which there was persistent arterial hemorrhage. This was on Thursday, the wound having been received on the previous Monday; the young man's condition was, of course, bordering on *extremis*. A few stitches at once controlled the hemorrhage, and he made an excellent recovery.

I was not surprised to find that everything from Mustang Liniment down to cobwebs had been used in the endeavor to control the bleeding before calling me in (though my office was only a few rods from the boy's home), but I was simply astounded to find that among the numerous things done was the calling in of a "pow-wow doctor."

Pow-wow is the term given to a form of incantation that I find very much in vogue among the native population. Let me also add that these "doctors" are said to accept pay for their services. The possessor of the charm, whether man or woman, comes by it through several channels: a man who is the owner of a charm may tell it to a woman, or a woman may tell it to a man, but should either chance to tell one of the same sex—*presto*, change!—the one told becomes the possessor, and the narrator is "out in the cold!" Charms are, therefore, well guarded. When a pow-wow doctor is about to shuffle off this mortal coil there is great scampering to see who can secure the charm, as it possesses more potency when one becomes possessor in this way. As I am an outsider, so to speak, and a to-be-expected opponent of this form of medical practice, I have found it difficult to gather many data regarding it; but from a very few skeptics I have been able to glean a few facts. As a rule, a pow-wow doctor is a specialist, one pow-wowing for fits, another for worms, another for hemorrhage, the next for rickets, and so on. With all these experts in their several branches, I, of course, suffer just as much as my young brethren do in the city, for I am only a general physician. I have not been able to learn the secrets of any of the charms, but I have found that they consist in repeating certain portions of Holy Writ in such a manner as to be unintelligible to the hearers, at the same time performing certain impressive ceremonies. In the case of hemorrhage the pow-wow doctor filled a large shovel with live coals, and marched round the sufferer's bed, repeating his pow-wow. This he did three times, the number three playing an important part in this line of treatment. All well-behaved hemorrhages should cease after this; but, as in this case, the hemorrhage forgot its manners, and the boy fainted from loss of blood, I was sent for, and was enabled to demonstrate the superiority of a couple of properly applied sutures over all the pow-wows they could command. In place of being thankful to me for saving the boy's life, I am sure they detest me for upsetting their idol.

CASE II.—Another patient whom a number of physicians saw, and, according to the parents, could not help, was that of a rachitic child, who was treated by an old woman pow-wow, and cured by the following simple line of procedure: The child's back was shaved with a sharp razor to cut off the *heads of the worms* which were causing the disease (pathologists should make a note of this), and the parts were then anointed with some oil. The *séance* was thrice repeated, and a complete cure was the result.

CASE III.—I was called to see a child who was "*liver grow'd*"—an anatomic or pathologic condition of which I must confess to be ignorant in spite of a rather large post-mortem experience. The treatment previously to my being called in consisted in passing the child through a horse-collar, then around a table-leg, not forgetting the charm to be spoken during the act. Calomel, gr. ii, cured this critical condition in twelve hours, and I made another enemy.

I could go on indefinitely, relating the histories of similar cases; but these will illustrate my school of medicine, which is to-day flourishing within one-hundred miles of Philadelphia and New York. Among what class of people and where? Not in the backwoods, but in a thickly settled and prosperous district, and among people of moderate education. The pow-wow referred to as treating the patient in Case I was a man of some attainments, the father of the boy being the mainstay of the village (Methodist Episcopal) church, who, when he prays and exhorts does so in such an audible tone that in summer I am constrained to take to the woods. I beg not to be understood as scoffing at religion, as I am a firm believer in it; but I somehow cannot expand my limited intellect to understand a synchronous belief in the two forms of faith.

This question, however, has a serious side, and one that I think the profession should join in endeavoring to improve. Coming from another State, I was required to take an exhaustive examination before being allowed to practise. The reason for all this red-tape I cannot see, as apparently my duty to the county and its own duty to me end with my paying my dollar for the privilege of registering. We have no Board of Health, no registration of deaths or of births, at least none for the doctor to sign; in fact, it makes not the slightest difference whether there has been a physician in attendance or not. It frequently happens when an old person is taken sick that a doctor may not be called in, or not more than once or twice, because the patient is old enough to die, and there is no use in spending good money upon him. Fatal accidents happen which in the city would at least call for an inquest, but here none is held, no matter what are the circumstances. (To be correct I recall one, which the District Attorney had made in a case of murder.) It is thought sufficient to call in the undertaker and give the victim a proper burial. Illegitimate births are of frequent occurrence, nothing being thought of them if the constable succeeds in marrying the parents a few days before the child is born; if not, the mother is simply spoken of as having been unlucky, and has no stain in the eyes of future suitors for her hand.

The district flourishes in churches, so many in fact that they all have small attendance and the ministers are half-starved. The country about is a famous summer resort, and is filled with thousands of educated visitors each year. I have not made the colors so dark as I might. I ask the profession if some legislative action should not be taken with a view to requiring at least the registration of births and deaths and the investigation of all fatal cases in which a physician has not been in attendance?

BACTERIOLOGIC REPORT.

A BACTERIOLOGIC STUDY OF OYSTERS, WITH SPECIAL REFERENCE TO THEM AS A SOURCE OF TYPHOID INFECTION.

BY CHARLES J. FOOTE,
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AT the suggestion of Dr. C. A. Lindsley, Secretary of the Connecticut State Board of Health, I have made some bacteriologic experiments with oysters and with the water in which they grow, in order to determine how far the bacteriologic evidence supports the idea that typhoid fever may be communicated by oysters.

The conditions favoring the communication of typhoid fever by oysters require that the Bacillus typhi abdominalis should live a few hours at least in the water in which the oysters grow, and that, having been received between the shells of the oyster, it should live in the substance or juices of the oyster until such a time as this is eaten. In this locality this time would be from a few hours to four or five days, as it is the custom to "drink" the oysters in the river after bringing them in from the sound, for a few hours or days before opening them, in order to clean them, lessen their salty taste, and fatten them.

The work of other investigators on the vitality of the B. typhi abdominalis in salt water is not quite applicable to the instance under discussion, inasmuch as the temperature of the water is not given nor the amount of salt; and indeed, in some instances, the experiments were made with a sterile salt-solution. Freytag found that the B. typhi abdominalis would live in concentrated salt-solution five months.[1] Giaxa detected it in unsterilized sea-water after nine days from the date of infection, in sterilized water after twenty-five days.[2]

My experiments were made to find how long the B. typhi abdominalis would live in water having the same percentage of salt, the same temperature, and the same bacteria as the water in which the oysters were planted.

On December 20th a liter of water was taken from the river X, at low tide, in a sterilized flask directly over the oyster-beds. The flask was carried immediately to the laboratory, and ten c.c. of a bouillon-culture of the B. typhi abdominalis were emptied into it. The flask was then put in a wooden box outside of the window of the laboratory. Thus the temperature of the water approximated at least that of the river. The mean daily temperature of the weather during the experiment was taken from the weather-reports, and was as follows:

December 21st, 36° F.; 22d, 42° F.; 23d, 24° F.; 24th, 24° F.; 25th, 38° F.; 26th, 24° F.; 27th, 25° F.; 28th, 10° F.; 29th, 9° F.; 30th, 18° F.; 31st, 24° F.

For the first few days the water was not frozen, protected as it was in a wooden box, but during the last four days of the experiment there was a large cake of ice in the flask, and on December 30th the water was completely frozen and the flask cracked.

The last plate from the ice, made on December 31st, shows the vitality of the B. typhi abdominalis in frozen brackish water.

Agar plates were made from the flask of water on December 23d, December 27th, and December 31st. The plates were kept at 37° C. Check-plates were made also from a bottle of water from the river X, which was taken at the same time as the other sample, and was not infected with the B. typhi abdominalis. In every case $\frac{1}{10}$ c.c. of water was added to each plate, and in all cases in which I have stated that the B. typhi abdominalis was present cultures were made, from one or more colonies of each agar plate, on potato and in litmus milk, thus verifying the diagnosis.

The results were as follows:

Number of Colonies in $\frac{1}{10}$ c.c. of Water.

Plate of 23d, of infected water,	Innumerable cols. of B. typh. abd.
Check-plate of non-infected water,	2 or 3 cols., none resembling B. typh.
Plate of 27th, of infected water,	Innumerable cols. of B. typh. abd.
Plate of 31st, of infected water,	Innumerable cols. of B. typh. abd.

An estimation of the chlorin in the infected water was made, and there was found to be 0.1 per cent. chlorin or 0.15 per cent. salt.[3]

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[1] Zeitschrift für Hygiene, 1890.

[2] Zeitschrift für Hygiene, Bd. vi, p. 162.

[3] For this analysis I am indebted to Prof. H. E. Smith, of the Yale Medical School.

On January 15th two more samples of water were taken from the river X in sterilized liter flasks.[1] To one of the samples 10 c.c. of a bouillon-culture of the B. typhi abdominalis were added; the other sample was used to make check-plates.

The flasks were kept at the temperature of the laboratory, as it was desirable to prolong the experiments, and it was feared that if exposed to the outdoor temperature the water would freeze and the flasks crack. The temperature of the laboratory during the experiment ranged from 60° F. to 70° F.

Plates were made at the dates recorded, with the following results.

Water of river X—second sample—$\frac{1}{10}$ c.c. in each plate—water infected on January 15th.

Number of Colonies in $\frac{1}{10}$ c.c.

	Water infected with B. typh. abd.	Non-infected water.
Plates of Jan. 16th,	Innumerable cols. of B. typh. abd.	4 cols; none of B. typh. abd.
Plates of Jan. 18th,	Innumerable cols. of B. typh. abd.	4 cols.; none of B. typh. abd.
Plates of Jan. 21st,	Innumerable cols. of B. typh. abd.	5 cols; none of B. typh. abd.
Plates of Jan. 23d,	Innumerable cols. of B. typh. abd.	2 cols.; none of B. typb. abd.
Plates of Jan. 28th,	130 cols. of B. typh. abd.	3 cols.; none of B. typh. abd.
Plates of Feb. 1st,	About 10 cols. of B. typh. abd.; many other kinds growing on plate.	Sterile.
Plates of Feb. 5th,	B. typh. abd. not discovered; plate overgrown with other kinds of bacteria.	

We may conclude from these experiments that even in extremely cold weather the B. typhi abdominalis will live in unsterilized salt or brackish water eight days at least, while in warmer water it rapidly diminishes in number after the first week, and cannot be detected in the water after three weeks.

To determine whether the B. typhi abdominalis will live and multiply in oysters, it is necessary, as a preliminary step, to find out what bacteria, if any, are found in oysters, and whether any of them resemble the B. typhi abdominalis. To determine this point some oysters were taken from the river X on November 27th, at low tide, scrubbed in city water, rinsed with sterilized water, dried on a clean towel, and opened with a sterilized knife.

The juice surrounding the oyster was drawn off with a sterilized pipet, and gelatin plates were made, each one containing one drop of the juice. Tubes of Paretti's solution were also infected with five drops each of oyster-juice. A sterilized platinum loop was plunged into the liver and stomach, twisted around, drawn out and rubbed over slant tubes of agar.

The agar tubes and Paretti's solution were incubated at 37° C., the gelatin plates at about 22° C.

The oysters used in this experiment were numbered 1, 2, 3, 4, and 5.

The results were as follows:

Tubes of Paretti's Solution.

Oyster 1	Cloudy.
" 2	"
" 3	"
" 4	"
" 5	"

Gelatin plates were made from each of the Paretti cultures, but no bacteria resembling in their growth on gelatin the B. typhi abdominalis were found. Most of the bacteria developing in Paretti's solution from oyster-juice are anaërobic and are nearly all micrococci, so that they may be readily distinguished from the B. typhi abdominalis microscopically without making cultures on gelatin.

The following is a brief description of the kinds of bacteria found in oyster-juice which grow in Paretti's solution:

(*a*) In gelatin tube-cultures this presents almost no surface-growth, but shows as a white streak along the line of puncture. There is no liquefaction, and the growth is very slow at 72° F. On potato it forms an invisible growth.

Grown in peptone-solution it gives no indol-reaction. It turns litmus milk slightly acid. It is a micrococcus, sometimes arranged in strings like a streptococcus. It is harmless when injected into the peritoneal cavity of white rats.

(*b*) This bacterium grows dense, white, solid colonies on gelatin plates. The colonies are fairly round, but the outline somewhat dentated. After one week the colonies are nearly one-quarter of an inch in diameter. In gelatin tubes there is a thick, white, pasty surface-growth, with a good growth along the line of puncture. On potato it has a yellow growth. Under the microscope it shows large fat oval cocci.

(*c*) On gelatin plates the colonies of this bacterium are small, round and white, of slow growth. There is no liquefaction. In gelatin tube-cultures there is no surface-growth, and only a few small yellow globules along the line of puncture. There is no change in litmus milk—no indol-reaction is produced.

The microscope shows it to be a micrococcus.

(*d*) In gelatin plates the colonies after one week are minute specks. Under a one-half inch objective they appear as little, round, yellow drops.

On potato at 37° C. there is a white growth after twenty-four hours.

In gelatin tube-cultures there are little white specks along the line of puncture, with almost no superficial growth. After some days the gelatin becomes liquefied at the surface.

The microscope shows medium-sized micrococci.

Gelatin plates made with one drop of oyster-juice gave the following result:

Oyster 1. Large number of small, white colonies.
" 2. Innumerable, mostly liquefying bacteria.
" 3. Innumerable.
" 4. A few colonies.
" 5. Innumerable.

A few days later another experiment was made to determine more accurately the number of bacteria and the kinds found in oyster-juice. The gelatin plates were made with $\frac{1}{20}$ c.c. of juice in each plate. Nine oysters were examined.

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[1] An analysis of this water showed it to contain 0.06 per cent. of salt.

Oysters.	Number of bacteria in $^1/_{20}$ c.c. of juice.	Number of varieties noticed.	Number of liquefying in each plate.	Kinds recognized.
1	18	5	2	
2	18	5	...	Many B. fluorescens liquefaciens.
3	12	5	...	B. gasoformans.
4	39	...	3	
5	43	7	5	B. fluorescens liquefaciens.
6	48	6	4	
7	12	4	2	
8	84	10	11	
9	34	...	9	

At the same time agar plates were made with $\frac{1}{20}$ c.c. juice of the same oysters, and the plates were incubated at 37° C.

Agar Plates of Oyster-juice.

	Number of colonies in $^1/_{20}$ c.c. of juice growing at 37° C.
Oyster 1	1
" 2	3
" 3	Sterile
" 4	Many brown colonies
" 5	8
" 6	2
" 7	2
" 8	1
" 9	Many brown colonies

To determine whether the contents of the stomach contained any bacteria, the oyster was cut open with a sterilized knife and the surface of the stomach scraped with a loop of platinum; this was then drawn over a slant tube of agar. The loop of platinum was also plunged into the liver-substance, twisted around, drawn out, and rubbed over the surface of a slant tube of agar.

Agar Tubes made by drawing a Loop of the Contents of the Stomach over the Surface of the Agar. Tubes incubated at 37° C., Bacteria in one loop growing at 37° C.

Oyster 1	Sterile.
" 2	Sterile.
" 3	Sterile.
" 4	2 cols., not B. typh. abd.
" 5	1 col., B. megaterium.

A second experiment resulted as follows:

	Bacteria in loop of stomach-contents.	Bacteria in loop of liver-substance.
Oysters 1	1 col.	Sterile
" 2	Sterile	Sterile
" 3	Sterile	Sterile
" 4	Sterile	Sterile
" 5	A few colonies	A few colonies
" 6	Sterile	Sterile
" 7	Sterile	Sterile
" 8	Sterile	Sterile
" 9	A few colonies	Sterile

From these experiments we see that the number of bacteria in one cubic centimeter of oyster-juice which grow in gelatin range from 240 to 1680. The average number is about 684.

It may be of some interest to compare the number in the oyster-juice with the number in the water taken directly over where the oysters were growing. Samples of water taken directly over the oyster-beds and secured at the same time that the oysters were taken out of the water contained on an average 9520 bacteria in a cubic centimeter. Comparing this number with the number in the juice of the oyster we find that there are 8836 more bacteria in a cubic centimeter of the water surrounding the oyster than in the juice of the oyster. This indicates either that the juice of the oyster is destructive to certain bacteria or that the water undergoes a certain amount of filtration and purification in passing between the shells of the oyster.

The kinds of bacteria growing at 22° C. from the juice of the oyster are in most instances the same as those found in the water in which the oysters grow. Thus we find, among the more common varieties present, the B. fluorescens liquefaciens and the B. gasoformans. In one instance the B. megaterium was isolated from the stomach of an oyster. This bacterium, as is well known, is found on cabbage-leaves. There is a kind of seaweed, called by oystermen sea-cabbage, which is abundant around oyster-beds and on oysters. Whether this explains the presence of the B. megaterium in oysters I do not know.

Most of the bacteria found in the juice of the oyster do not grow at 37° C. By reference to the table of agar plates made from oyster-juice we see that there are rarely over 160 bacteria in one cubic centimeter of juice which grow at 37° C., and often there are not more than 20.

The examination of the stomach and liver of oysters shows in many cases that they are free from bacteria which grow at 37° C. The liver-substance was free in eight oysters out of nine, while the stomach was free from them in six out of nine.

I have studied chiefly the bacteria in oysters which grow at 37° C., as most growing at a lower temperature may be ruled out as a cause of disease. The bacteria from oysters growing in Paretti's solution I find, as a rule, quite different from those growing on agar plates. In the former case the bacteria are mostly anaërobic micrococci, while in the latter case they are aërobic bacilli.

Some of those growing in Paretti's solution, as already stated, resemble the B. typhi abdominalis by their invisible growth on potato, but are easily distinguished microscopically.

Two varieties isolated from agar plates liquefy gelatin rapidly, and are thus distinguished from the B. typhi abdominalis.

Three non-liquefying kinds were isolated from the agar plates, which in the early stages of growth on gelatin somewhat resembled the B. typhi abdominalis, but were easily distinguished from it by their growth on potato and in litmus milk.

Inasmuch as river-oysters, as a rule, are more exposed to contamination from sewage than oysters which are taken four or five miles away from any such source of contamination, from deep water, it seemed of interest to compare their relative infectiousness.

To do this bouillon-cultures were made by putting a half centimeter of the juice of an oyster into bouillon and allowing it to develop at a temperature of 37° C. for forty-eight hours. One cubic centimeter of this culture was then injected into the peritoneal cavity of a white rat.

Bouillon-cultures were thus made from seven river-oysters and from five oysters taken three miles out in Long Island Sound, south of the New Haven lighthouse. One cubic centimeter of each culture was then injected into the peritoneal cavity of white rats. After one month all of the five rats injected with bouillon-cultures from the sound-oysters were living and well; of the seven rats injected with bouillon-cultures of river-oysters five were living and well, but two had died.

One died three days after inoculation, the other six days after inoculation. From the blood and the liver of one of the rats a bacterium was isolated showing a white, round colony on agar plates, in litmus milk producing an intensely acid reaction, and producing a yellow slimy growth on potato.

From the blood, liver, and spleen of the other rat a bacterium was isolated, producing a brown growth on agar, with a green fluorescence. These experiments, as far as they go, seem to show a greater infectiousness of river-oysters.

It is an easy matter to determine the fact that the B. typhi abdominalis will live in oysters, but very difficult to tell whether it will propagate in them. A numerical estimation cannot be made of the number of bacteria in an oyster, even though we may know how many were introduced into it. It is clear, therefore, that conclusions in regard to number can be only very inexact.

My method consisted in cleaning a number of oysters and then injecting one cubic centimeter of a bouillon-culture of the B. typhi abdominalis with a Koch syringe between the edges of the shells. In this way a pile of oysters were infected. The oysters were kept in a cool room, the temperature ranging from 50° to 65° F. The vitality of the oysters was not apparently impaired by the operation, for, when opened subsequently, most of them appeared fresh.

Every few days one of the oysters was opened and agar plates were made from one-half a cubic centimeter of juice. The surface of the oyster over the stomach was then scorched with a red-hot iron, and the stomach was opened with a sterilized knife. A loop of the stomach contents was then drawn over a slant tube of agar. The plates and tubes were kept at 37° C.

In this way it was thought that if the B. typhi abdominalis multiplied, the agar plates and slant tubes for each succeeding oyster would show a greater number of the B. typhi abdominalis than the oysters opened before it; while if the B. abdominalis died, the juice of succeeding oysters would show a quick decrease in number.

Occasionally an oyster was opened which had lain in the same room with the other oysters, but had not been infected with the B. typhi abdominalis. Plates were made from the juice and slant tubes from the stomach, as a check on the method.

As a preliminary experiment, some of the juice of a large oyster was drawn off with a sterile pipet, put into a sterilized test-tube, and infected with a loop of a culture of the B. typhi abdominalis.

Every few days agar plates were made with two loops of this juice. The tube of juice was kept at a temperature of between 60° F. and 70° F.

The results were as follows:

Oyster opened and juice drawn off on December 21st.

	Number of colonies in two loops of juice after infection.	Number of colonies in two loops of juice before infection.
Plate of Dec. 21st . .	Innumerable colonies of B. typh. abd.	Sterile.
" Dec. 23d . .	" " " "	
" Dec 27th . .	" " " "	
" Dec. 31st . .	About 100 cols. of B. typh. abd.	
" Jan. 10th . .	One or two cols. of B. typh. abd.; plate overgrown with other bacteria.	

The following is the record of results with living oysters:

Oysters Injected with Bouillon-culture of B. typh. abd. on January 16th.

Oyster A. Opened January 17th.
½ c.c. juice contains innumerable cols. of B. typh. abd.
Stomach, a few cols. of B. typh abd.

Oyster B. Opened January 19th.
½ c.c. juice contains innumerable cols. of B. typh. abd.
Stomach, 50 or 60 cols. of B. typh. abd.

Oyster C. Opened January 22d.
½ c.c. juice contains 200 cols. of B. typh. abd.
Stomach, 2 or 3 cols. of B. typh. abd.

Oyster D. Opened January 24th.
½ c.c. juice contains innumerable cols. of B. typh. abd.
Stomach, about 14 cols. of B. typh. abd.

Oyster E. Opened January 28th.
½ c.c. juice contains innumerable cols. of B. typh. abd.
Stomach, sterile.

Oyster F. Opened January 28th. Check from pile not inoculated with B. typh. abd.
½ c.c. juice, sterile.
Stomach, sterile.

Oyster G. Opened February 2d.
½ c c. juice contains about 60 colonies of B. typh. abd.
Stomach, sterile.

Oyster H. Opened February 13th.
½ c.c. juice contains about 40 cols. of B. typh. abd.
Stomach, 3 cols. of B typh. abd.

In stating the number of colonies of the B. typhi abdominalis an exact number cannot be given, as there may have been in some instances other kinds of bacteria present which were mistaken for the B. typhi abdominalis. In general, however, the number is approximately correct, as cultures were made from some of the colonies of every plate, in litmus milk and on potato, and the mere plate appearance was not alone relied upon to determine whether I was dealing with the B. typhi abdominalis or some interloper.

These experiments do not throw very much light on the question of the multiplication of the B. typhi abdominalis in oysters. They do, however, seem to show that if multiplication does occur it takes place within the first two weeks, and that after that there is a progressive decrease in the number of the B. typhi abdominalis found in oysters, but that it may be found even after thirty days from the date of infection. They further show that the B. typhi abdominalis not only lives in the juice, but penetrates into the stomach and lives there for some time. In fact the B. typhi abdominalis lives longer in the juice and stomach of the oyster than it does in the water in which the oyster grows.

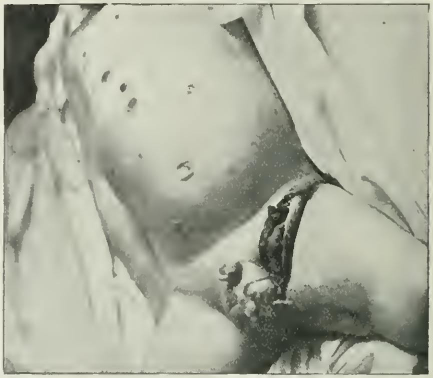
CLINICAL MEMORANDA.

VARICELLA COMPLICATED BY GANGRENE OF THE SCROTUM.[1]

BY CHARLES D. SPIVAK, M.D.,
OF PHILADELPHIA.

JONATHAN HUTCHINSON was the first to draw the attention of the medical profession to a complication of varicella characterized by the development of gangrene of the skin and deeper tissues at the the site of the eruption. Since his memorable article on "Gangrenous Eruption in Connection with Vaccination and Chickenpox,'"[2] similar cases have been reported from England by Abercrombie,[3] Martin,[4] Howard,[5] Jamieson,[6] Andrew,[7] Bowlby,[8] Payne,[9] Crocker,[10] and Stanifooth.[11] The United States and Germany are represented in the literature on the subject by two authors each: the first by Woodward[12] and A. F. Büchler,[13] and the second by Demme[14] and Cassel.[1] Whether the children of other nationalities are exempt from this complication, or the cases have not been reported, I do not undertake to decide. So far as my researches go I have been unable to find a single case in French, Italian, Russian, or Spanish medical literature. The rarity of the complication in general, and the exceptional features of the case that came under my treatment in particular, seem to justify me in reporting it.

The patient was a boy of Russian parentage, aged two years, whose father and mother are healthy, with no scrofula or tuberculosis in the family, and with five other children all well and healthy. He had had no serious illness previous to the attack of chickenpox. As I saw the case for the first time only on the eighth day of the disease I have to rely upon the data furnished by the parents, who proved to be tolerably good observers and quite reliable. On November 25, 1894, the chickenpox was noticed for the first time; on the 26th the child became restless and had fever; on the 27th the fever increased, the child was delirious, and the scrotum became red and swollen. This state continued until the 30th, when the swelling extended to the left inguinal region; a black spot the size of a pin-head had appeared on the left side of the scrotum, and soon several others formed a circle around the original one and coalesced. On the following day another black spot appeared a little further to the left on the scrotum, and "before one had time to look at it," as the parents expressed themselves, the process of deep ulceration and "eating up" commenced. On December 3d I saw the child for the first time. It was well preserved and plump, as seen by the photograph and by its appearance now, and somewhat irritable. The penis, the scrotum, and the left inguinal region were very much swollen and tender. The left side of the scrotum was covered by blackish, muddy-looking crusts and detritus covering about two-thirds of it and passing over the raphe to the right side. The smell was very offensive. The crusts and detritus were carefully removed and the tunica albuginea of the left testicle was exposed to view, thus showing that the gangrenous process destroyed not alone the integument but also the dartos, the external, cremasteric, and internal fascias, and the tunica vaginalis. There was a distinct areola around the ulcer. The presence of pus in the inguinal region was easily demonstrated by fluctuation and also by the oozing from a very small spontaneous opening found about half an inch from the scrotum. The temperature was 101.6°, the pulse 110. Pressure over the bubo gave pain, but the handling of the ulcer was almost painless. I washed the parts with mercuric chlorid and applied an iodoform-gauze dressing and a bandage. On the following day, when the bandage was removed, the ulcer was found to present a somewhat better appearance, but was still angry-looking and covered with pus from the oozing aperture. The child was anesthetized by Dr. Rachel Skidelsky, and introducing the grooved director through the opening I laid open the inguinal region throughout its length, as shown in the photograph. I cleansed the wound thoroughly and packed it with iodoform-gauze. (The photograph was taken at this juncture, and shows the incision with the packing in it; the left testicle exposed and many spots of dried-up vesicles all over the body.) The ulcer was



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[1] Read before the Philadelphia County Medical Society, February 13, 1895.

[2] Med.-Chir. Trans., vol. lxv, p. 1.

[3] Trans. Path. Soc. Lond., vol. xxxi, p. 333.

[4] Brit. Med. Journal, 1881, vol. ii, p. 803.

[5] Ibid., 1883, vol. i, p. 904.

[6] Trans. Med. Soc. Edin., 1886-87, vol. vi.

[7] Clinical Record, 1890, vol. i, p. 63, and Trans. Clin. Soc. Lond., vol. xxiii, p. 79.

[8] Lancet, London, 1885, vol. i, p. 987.

[9] Trans. Path. Soc. Lond., vol. xxxvi, p. 471.

[10] Med.-Chir. Trans., vol. lxx, p. 397; Lancet, 1885, i, and Roy. Med. Chir. Soc., 1885, p. 282.

[11] Med. Press and Circular, London, 1890, vol. xlix, p. 37.

[12] Pacific Med. and Surg. Journal, 1889, vol. xxxii, p. 197.

[13] Amer. Journ. Med. Sci., 1889, vol. xcviii, p. 265.

[14] Wiener med. Blätter, 1892, vol. xv, p. 37; Klin. Mitth. aus d. Geb. d. Kind., 1891, 38.

[15] Archiv für Kinderkrankheiten, 1894, vol. xvii, p. 371.

dressed with mercuric-chlorid gauze saturated with hydrogen dioxid, and a T-bandage applied. Of course, the ulcer required a good deal of trimming for the removal of dead tissue. I ordered two grains of quinin to be given in the evening and two grains in the morning. It was then that I noticed that three children in the same family had varicella in different stages of development. There were no complications in the other cases.

On the following day the temperature fell to 99.2°; the child slept almost the whole night, the first time since it had been sick; the ulcer and wound were clean and the gangrenous process checked. The local treatment was continued the same during the entire period of the regeneration of the scrotum, which took about thirty-five days. The repair is complete and admirable, leaving only a star-shaped cicatrix. No internal treatment was needed after the third day.

Through the kindness of Dr. J. S. Billings, Deputy Surgeon-General U. S. Army, I was enabled to trace the literature on the subject antedating the report of Hutchinson. Besides the mention by Hutchinson of two cases in Guy's Hospital Museum, which were named varicella escharotica, and the case of Stokes described in 1807 in his *Dublin and Physical Essays on Eruptive Diseases of Children*, which he named pemphigus gangrænosa, and which, according to Hutchinson, are to be regarded as cases of varicella gangrænosa, the following cases were reported and minutely described by their respective authors as varicella complicated by gangrene: Dr. Humphrey Storer,[1] Steinthal,[2] Loewenhardt,[3] Dr. Frederick J. Brown,[4] of Rochester, and Dela Harpe.[5]

529 PINE STREET.

TEN CONSECUTIVE CASES OF DIPHTHERIA TREATED WITH THE ANTITOXIN.

By CHARLES S. SMITH, M.D.,
OF ELROY, WIS.

I WAS called, February 4, 1895, to see Mrs. V., aged twenty-four years, who was suffering with sore-throat, headache, fever, and general malaise. On examination I found the surface of both tonsils covered with diphtheric deposit. No antitoxin was used in this case, as there was none to be obtained. The usual remedies, swabbing, spraying, etc., used. After about ten days the patient was convalescing and made an uneventful recovery.

CASE I.—Six days after Mrs. V. was taken sick her eldest son Philip, aged four years, developed diphtheria, with a thick deposit over both tonsils. The pulse was 120, the temperature 99°. There was used in this case Behring's antitoxin, No. 2, ♏x. The next day the pulse was 112, the temperature normal, and the deposit on the tonsils began to peel off. Antitoxin, ♏xx, was used. On the third day the patient was convalescing and practically well.

CASE II.—Frank V., of the same family as the preceding case, aged two years, when seen had been ill thirty-six hours. There was a diphtheric deposit on both tonsils. The pulse was 152, the temperature 99°. Antitoxin No. 2, ♏x, was injected, and twenty-four hours later the pulse was 132, the temperature normal; the countenance and general aspect of the child improved. There still remained patches in the throat, and ♏xv more of antitoxin were injected. On the third day the child was practically well.

CASE III.—Mary S., aged sixteen years, had been sick one week with sore-throat when I was called. On examination I found the whole surface of both tonsils leading into the nasal cavities covered with diphtheric deposit, from which emanated an odor so offensive that one could hardly remain in the room; ♏40 of Behring's antitoxin, No. 2, were injected. I also used an antiseptic spray, together with quinin and morphin, to give rest. On February 13th, twenty-four hours afterward, ♏30 of antitoxin No. 2 were injected. (I should have used more, but this was all I had at the time.) On February 17th the patient was much improved, and there was exfoliation of large amounts of membrane. (A large mass of membrane was placed in a bottle and sent to Dr. C. E. Booth, Low Moor, Va., for microscopic examination. He reported that the Loeffler bacilli were present.)

Having obtained a new supply of antitoxin No. 1 I gave ♏40 on February 19th; the patient convalescing, ♏30 more were injected. On February 20th the throat was entirely clean, the pulse 100, the temperature 98.5°. The patient was practically well, with the exception of paralysis of the throat, difficult articulation, etc. After seven days' treatment the patient had so far recovered as to be able to care for others of the family who were ill.

CASE IV.—Otto N., aged nine years, was of the same family as the preceding case. When seen he had been ill twenty-four hours, with headache, sore-throat, etc. The pulse was 120, the temperature 101°; ♏60 of antitoxin No. 1 were injected. On the third day the pulse was 116, the temperature 98.5°. Antitoxin, ♏40, was again used. On the fourth day of the sickness the pulse was 80, the temperature 98.5°, the throat was clean, and the patient was about the house.

CASE V.—On February 18th, Bertha M., aged three years, had been sick four days before I was called. On examination I found the tonsils and uvula covered with diphtheric deposit. The mother and sister in the same family were also sick with diphtheria. I used ♏60 antitoxin on February 19th, ♏40 on February 20th, and ♏30 February 23d. The throat now became clean and the child was rapidly convalescing. This was practically all the treatment used, as the child was unruly and hard to manage; therefore, any local or constitutional treatment was impossible. The membrane was also examined in this case, and diphtheria-bacilli found.

CASE VI.—On February 19th I was called to see a German family, five of whom had been sick for twenty-four hours with diphtheria. Antitoxin was used in all these cases, and within five days all were as well as ever.

Dr. Robert Bruce Mowrey, the oldest physician in Allegheny County, died on March 14th, at Pittsburg, at the age of eighty-one years. He was graduated from Jefferson Medical College in 1836. He was a member of the American Medical Association and of the Medical Society of the State of Pennsylvania, and an honorary member of the Medical Society of the State of California. He was one of the founders of the Allegheny General Hospital.

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[1] Boston Med. and Surg. Reporter, 1828, vol. i, p. 212.

[2] Analekten, 1843, pp. 1–43.

[3] Rheinische Monat. für Prakt. Aertz., Köln, 1850.

[4] Brit. Med. Journ., 1863, vol. ii, p. 420.

[5] Bull. Soc. Méd. de la Suisse Rom., 1869.

CLINICAL REPORT OF SEVEN CASES OF VARICOCELE TREATED BY INCISION, DELIGATION OF VEINS, AND SHORTENING OF THE SCROTUM.[1]

BY W. E. PARKER, M.D.,
OF NEW ORLEANS.

I HEREWITH present the histories of seven cases of varicocele that I have treated by a method that is simple, that does not require any complicated instruments, and that has been very satisfactory in its results. The operation is performed as follows:

An incision, varying in length according to the size of the varicocele, is made directly over the mass of veins. The varicose veins are then ligated in two places, removed, and the stumps brought together. The ends of the incision are then brought together, and the wound changed from a longitudinal to a transverse one. The incision should be sufficiently long to bring the affected side of the scrotum well above the other. There is a slight redundancy of tissue at the ends of the wound when closed, but this in time does not show so markedly as at first, although still present in all of my cases. The operation is easily performed, and requires but few instruments; one can see what he is doing, and there is no troublesome hemorrhage. Fearing that the shortening of the scrotum might not last, I had intended to remove with a pair of curved scissors an elliptical piece of the scrotum and then sew the wound transversely in my future cases, but have not recently had a case that required operation, and my results have been so satisfactory with the method I have used that I think I shall continue to use it. No drainage-tube was used in any of these cases, and all recovered, with union by first intention and without any complication. Briefly, the histories of my cases are as follows:

CASE I.—G. B., a laborer, aged thirty-two years, white, came to the out-door clinic of the Charity Hospital May 14, 1894. He has had dull pain in the left testicle and groin for the past year, which has increased in the past three months. He masturbated in boyhood, but not since. He is constipated. He had epididymitis three years ago. On examination a large varicocele was found, the left testicle hanging much lower than the right. He was admitted to the ward, and that night given ℥ss magnesium sulphat, and the parts were shaved and prepared for operation, which was performed the next day. The wound healed kindly, and the patient was discharged, cured, June 3d. I saw this patient five months after the operation. He is still well, and the left testicle still hangs well above the right.

CASE II.—Ed. W., a negro, aged thirty-four years, a laborer, came under observation June 19th, having a large varicocele of the left side. He had orchitis five years ago, and suffers from constipation. He was operated upon on June 20th. The wound healed by first intention, and the patient was discharged, cured, July 5th. This case especially interested me on account of his race. In a service of three years in the negro male surgical service, and one year in the male genito-urinary clinic of the Charity Hospital, where about two-thousand cases per annum are treated, I have seen but two cases of varicocele in the negro. I have not seen this man since he was discharged from the hospital.

CASE III.—Mr. T., aged twenty-nine years, a clerk, of German descent, is an epileptic, and believes that his varicocele causes the convulsions. The varicocele is rather large. He was operated upon on June 2d. The wound healed kindly and under one dressing. I saw him in the early part of October. The varicocele was well, and the left side of the scrotum was still higher than the right. He thinks the convulsions are less frequent and less severe.

CASE IV.—Albert H., aged twenty-six years, a laborer, has had epididymitis and is constipated. He noticed the varicocele five or six years ago, but it did not trouble him until the past year. He was operated upon on June 27th. The wound healed nicely, and he was discharged July 10th. He returned the latter part of September with chancroids, the varicocele well, and the left side of the scrotum still higher than the right.

CASE V.—I saw this man, Mr. J., in consultation with Dr. R. DeMontluzin. The operation was performed on July 5th. The man was discharged July 15th. He had a large varicocele, which he thought interfered with his sexual powers. Dr. DeM. tells me that he is now perfectly well, and that the left side of the scrotum is still higher than the right.

CASES VI and VII were both clerks, one nineteen and the other twenty-one years old. Both were of nervous temperament, but there was nothing else in their history to show the cause of the varicocele. Both were operated upon in July, and the result up to date is satisfactory.

Such is the history of my cases of varicocele treated in this way. I like the method of changing the wound from a longitudinal to a transverse one, because it shortens the scrotal hemorrhage or bruising. Should the scrotum become lower on the left side than on the right I would in the future remove the elliptical piece, as I have suggested.

I think that the milder cases of varicocele should be treated with a suspensory bandage, with proper regulation of diet, exercise, and the bowels. I think a varicocele should be operated upon:

1. If it is of large size. 2. If it is very painful. 3. If there be marked nervous symptoms present. 4. If the testicle is atrophying. 5. If the varicocele is increasing rapidly. 6. If it is an obstacle to entering public service. 7. If on account of the patient's occupation a suspensory bandage is troublesome and he desires an operation.

I do not claim that this method of shortening the scrotum, by converting a longitudinal incision into a transverse one, is new, but I have never heard of anyone else using it.

MEDICAL PROGRESS.

Abscess of the Left Occipital Lobe Causing Object-blindness and Word blindness.—CAMPBELL (*Liverpool Medico-Chirurgical Journal*, 1895, No. 28, p. 52) has reported the case of a man, forty-three years old, whose occupation rendered him liable to exposure in all kinds of weather and entailed irregularity of meals. There had been deafness in the left ear for thirty years, and for ten years a discharge from this ear. Examination disclosed perforation of the tympanic membrane with granulations. For three or four months there had occurred attacks of giddiness, and on one occasion the man became suddenly confused, lost his feet, and was completely aphasic. Consciousness was not lost, and the man was soon able to go on his way. On the following morning the power of speech had returned and all locomotor disturbances had disappeared. When seen a month later the man was in a state of mental depression and complained of a sense of oppression at the vertex. He presented object-blindness (inability to recognize objects), word-blindness (inability to interpret printed symbols), paralexia (misuse of words in reading), and paragraphia (the misspelling of words and the incorrect arrangement of their letters). Occasionally words were transposed in ordinary conversation. There was no word-deafness.

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[1] Read at the meeting of the Southern Surgical and Gynecological Association, Charleston, November 15, 1894.

While under observation the man had several seizures similar to that already described, always becoming absolutely aphasic and confused for from twenty to thirty minutes after the attack, and occasionally losing the power of the right arm and leg, which during the seizure were convulsed. He began to complain of left-sided occipital headache, which became constant and intense, lost his memory, acquired delusions of persecution and visual hallucinations, refused food, and became violent toward his wife. Ophthalmoscopic examination disclosed marked double optic neuritis with hemorrhages. The right half of the visual field was limited. There existed homonymous hemianopsia. There was no absolute color-blindness, although there was uncertainty in distinguishing various shades of the same color. The right pupil was slightly the larger; both reacted to light and in accommodation. The knee-jerks became exaggerated. The man grew progressively worse, and toward the end of his illness there was some general diminution of sensation. Finally he became stuporose, and ten days before death, which resulted from respiratory failure, rotatory nystagmus in all directions, ataxia, and special weakness of the trunk-muscles were observed.

Upon post-mortem examination the inner surface of the calvarium yielded a prickly sensation to the tip of the finger, from the presence of numerous extremely delicate osseous spicules. The left hemisphere was considerably larger than the right, and was obviously bulged in the occipital segment. This bulging began internally opposite the anterior margin of the precuneus; it flattened all the sulci, particularly the parieto-occipital, from within outward and extended backward to the tip of the occipital lobe, which was rounded instead of being pointed. A corresponding part of the outer surface of the hemisphere was also bulged. The surface of the hemispheres was of pale color, but over the swollen left occipital segment it was distinctly reddened and betokened subjacent inflammation.

On horizontal section, the swelling was found to be due to a centrally situated abscess of the size of a turkey's egg. The abscess was round in shape, and, from the thickness and roughness of its walls, presented an encapsulated appearance. The surface-tissues covering the abscess, though unbroken, were much thinned and undermined. The nearest point to the surface which the abscess reached was at the parieto-occipital fissure. The white matter surrounding the abscess was softened and inflamed, and this inflammatory condition encroached on the center of the hippocampal and uncinate gyri, the subcallosal fasciculus, the posterior pillar of the fornix, the optic thalamus, and the tegmentum cruris of the left side. The posterior horn of the lateral ventricle was not broken through. The ventricular fluid was diminished in amount, but of normal quality. The upper surface of the cerebellum was flattened, softened, and congested. The olfactory bulbs were slightly flattened. The lungs presented some patches of lobular pneumonia, but the remaining organs were healthy.

On microscopic examination of the pons small hemorrhages were found in the region of the red nuclei. There was some descending degeneration in the left lemniscus and posterior longitudinal bundle, probably in consequence of the softening of the left optic thalamus. Some degenerative fibers were visible in the left and right superior and middle cerebellar peduncles and in the left pyramidal bundles; the latter were followed down the spinal cord. In the medulla some degeneration was found in the restiform bodies. This could be traced into the cuneate nuclei, thence into the funiculi cuneati, and thence into the posterior external columns of the spinal cord, down which it could be followed as far as the point of origin of the ninth dorsal pair of nerve-roots. Some fibers in the anterior and posterior nerve-roots were degenerated, but definite degenerative changes in the cornual ganglion-cells could not be found.

On the Measurement of Simple Reaction-time for Sight, Hearing, and Touch.—At the last meeting of the British Association for the Advancement of Science, Professor W. Rutherford, M.D., F.R.S., presented a communication detailing that in observations made on eight intelligent, healthy men, varying in age from nineteen to sixty-two years, the reaction-time for sight varied from 0.1662 second to 0.2202 second, and was mostly between 0.20 second and 0.22 second. The reaction-time for hearing varied from 0.1448 second to 0.1930 second, and was mostly between 0.15 second and 0.16 second. The reaction-time for touch varied from 0.1416 second to 0.1906 second in the different cases. The shortest touch reaction-time is that following stimulation of the cheek; it varied from 0.141 second to 0.157 second. When the skin of a finger was stimulated the reaction-time varied from 0.142 second to 0.190 second, but was mostly from 0.15 second to 0.18 second in the different cases; there was no evident relation between the age and the length of reaction-time in the cases under observation. In a limb the reaction-time is generally longer the greater the length of sensory nerve traversed by the impulse; but there may be considerable variations in the reaction-times for different districts in the field of touch not explicable by difference in the length of sensory nerve traversed, but probably due to difference in the closeness of relation between centers for tactile sense in the brain and the motor center for the hand. It may, therefore, happen that a response is given sooner by the hand when its skin is stimulated than when the mucous membrane of the tongue is stimulated, although in the latter case the impulse has a much shorter tract of sensory nerve to traverse. When the right hand gives the response the shortest reaction-times for hearing and touch are obtained by stimulating the right ear and the right cheek. In the experiments on sight, both eyes were used at the same time. The influence of fatigue on reaction-time and the remarkable restorative effect of tea were demonstrated by photographs.

Frog-skin Grafting.—SMITH (*Boston Medical and Surgical Journal*, vol. cxxxii, No. 4, p. 79) has reported the case of boy, five years old, who suffered a deep and extensive burn, involving an area of the trunk, face, and neck. The part involved was bounded by a line extending from the thyroid cartilage down the median line of the body to within an inch of the umbilicus; thence around the trunk to the median line of the back; from here up to the external occipital protuberance; thence to the malar bone on the left, including a portion of the ear; diagonally across the face to the right angle of the mouth, and finally reaching the thyroid cartilage.

When seen, four weeks after the accident, the entire surface was covered with healthy granulations that bled freely upon the slightest touch. The fold of the axilla had become firmly adherent to the chest, binding the arm firmly down. To expedite recovery, and in view of the unfavorable condition of the subject, grafting with the aid of frog-skin was decided upon. Small pieces, each a quarter of an inch square, were placed in rows, each separated from the other by a space of half an inch; and this was repeated until, after the lapse of seven weeks, the whole surface was covered. The treatment was repeated daily, from twenty to eighty frog-grafts and a smaller number of human grafts being used on each occasion. The surface was first cleansed by irrigation with a warm solution of boric acid 1 to 40, and subsequently washed with a stream of sterilized water. Each graft was then firmly pressed into the granulation-surface, and subsequently a dressing of boric acid and vaselin, a dram to the ounce, was spread upon strips of compressed cloth and applied so as to fit the parts. Over this was placed sterilized gauze and finally a rubber bandage. In all nearly a thousand frog-grafts and four-hundred human grafts were used.

Pylorectomy for Carcinoma.—JESSOP (*British Medical Journal*, No. 1778, p. 189) has reported the case of a woman, forty-nine years old, in which pylorectomy was performed for the relief of obstruction of the pylorus by malignant disease. In the course of a few months the woman resumed her ordinary duties, and three years later she appeared in good health. The tumor removed was an inch-and-a-half long and six inches in circumference. The pyloric opening barely admitted the tip of the little finger; the stomach-wall was much thickened; the duodenal wall less so. At the lower part of the pyloric opening was a saucer-shaped ulcer of the size of a shilling, with a thickened base. Microscopically the tumor consisted principally of densely packed fibrous tissue, with intervening small round cells, and here and there in the interstices of the fibrous tissue were the remains of degenerated glands, which were numerous in the deeper layers of the section outside the fibrous tissue.

Suppression of Urine in Diphtheria.—GOODALL (*Lancet*, No. 3727, p. 269) calls attention to the occurrence of urinary suppression in the course of diphtheria in the absence of distinctive lesion of the kidneys, and cites six illustrative cases.

In one there was total suppression for nearly seventy hours before death; in a second for fifty-seven hours; in a third almost total suppression for forty-two hours; in the fourth, partial suppression for some days and total suppression for twenty-four hours; in the fifth, partial suppression for four days, and in the sixth, the only one in which recovery ensued, the amount of urine was notably diminished for a period of fourteen days. All of the cases were severe and presented albuminuria. Besides the anuria there was often vomiting, and symptoms of cardiac failure were nearly always present, death often taking place from this cause. There was usually also much local exudation upon the fauces.

THERAPEUTIC NOTES.

The Treatment of Erysipelas with Strong Alcohol.—LANGSDORFF (*Centralblatt für Chirurgie*, 1895, No. 8, p. 189) reports the employment of topical applications of strong alcohol in the treatment of thirty-two cases of erysipelas. Soft, thick linen compresses are saturated with the alcohol, and are renewed every fifteen or twenty minutes, being covered with dry cloth and gutta-percha tissue. If the face is affected, cotton compresses are used instead of linen as adapting itself better to the irregularities of the surface. The compress must be saturated with alcohol, and should be frequently changed. In all cases thus treated the symptoms speedily receded. Some little discomfort was experienced from the applications when the face was involved and in the case of sensitive persons who were unpleasantly affected by the odor. The redness and tension often disappear in the course of eight or ten hours, after which the intervals of application may be lengthened. Recovery, as a rule, resulted in the course of two or three days. If the morbid process manifested a disposition to extend, the applications were made to include the new areas involved. For the dryness of the skin following the applications lanolin was found serviceable. Official absolute alcohol diluted with 1 per cent. of water was employed.

Gallanol.—JOSEPH (*Berliner klinische Wochenschrift*, 1895, No. 8, p. 164) reports results obtained from the employment of gallanol, the anilid of gallic acid, in the treatment of various diseases of the skin. He found the remedy not to be compared with chrysarobin in activity and efficiency in the treatment of psoriasis, but applicable in the milder forms and when rapidity of result was not essential. Gallanol has the advantage of not soiling the hair, the skin, and the linen. The remedy was employed in a 10 per cent. traumaticin-solution, and for psoriasis of the head and face in the form of a 10 per cent. ointment. The remedy proved less successful in the treatment of eczema. In this condition it was employed in the form of powder in various concentrations. It was likewise employed as an ointment in varying strengths, but no influence was exerted either upon the eczema or upon the itching. The results in herpes tonsurans and eczema marginatum with a 10 per cent. solution were similar to those obtained in the treatment of psoriasis.

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SATURDAY, MARCH 23, 1895.

GYNECOLOGY AND PSYCHOLOGY.

WHEN ARETAEUS described the womb as an animal within an animal, wandering about, attracted by fragrant things and fleeing from fetid, he foresaw, as through a speculum dimly, the era of modern gynecology. When PLATO said that the womb is desirous of generation and that, if unfruitful, it turns indignant and wanders about the body, stopping the passage of the humors, he clearly indicated the necessity, in some cases, for a modern hysterectomy. When PAUL, of Aegina, declared that hysteria is caused by putrid secretions in the uterus, he discerned, as with prophetic vision, the fountain-syringe and a 1–4000 solution of mercuric chlorid.

Thus, in the dawn of science, the errant womb, issuing from prehistoric darkness, with a train of sacrificial priests, appears already surrounded and obscured with a mysterious *cult*. Not even phallic worship—potent enough in all ages—will hold the world-stage with her. On through the ages, behind her impenetrable veils, with which conventionality had replaced her primitive fig-leaves, she comes claiming the allegiance and the worship of men. Thus she advances, with her rites almost unchanged, to the modern era.

We are now in the period, however, in which the sacrifices are too suggestive of human blood; in which the penance is too exacting of human hopes and reason. Let us explain ourselves.

The theory of the psychologic school of gynecologists is that the womb and its appendages are the etiologic factors in some forms of insanity. Therefore, they advise that the cause be removed; that the ovaries especially, and, if opportunities are favorable, the womb itself, be cut out. In this their *confrères* of the gynecologic school of psychologists in the main agree with them, only urging that due caution be had for Boards of Directors and Trustees.

According to this theory, the "mind," having been freed from the assaults of the erratic womb, ought to swing at once into static equilibrium. Possibly it would do so if it were simply the inert mass that this theory seems to presuppose it to be. But it is not an inert mass, simply acted on *per vaginam*. No speculum has yet explored its hidden mysteries; no celiotomist has yet penetrated through *its* walls to the complex source of its diseases. It is not a mass receiving its impulses from a body of unstriped muscular tissue. It is an assimilating "psyche," and, unfortunately, when insane it grows by what it feeds on. It can, moreover, just as readily feed on a gynecologic operation as on more wholesome and inviting food. All of which has been illustrated to us recently by a most instructive case.

An unmarried woman, of highly nervous organization and with a constitutional tendency to imperative conceptions (mental, not uterine), was relieved of her womb and ovaries by an enterprising surgeon. There is no question that the womb was diseased, having undergone some fibroid enlargement. It had not, however, interfered with her health, which was impaired only by beginning delusional ideas, which were commencing to control her. She made, rather unfortunately it seems for her, an uninterrupted recovery; and we have no doubt that her case has gone to swell the records of "successful" operations reported by this particular surgeon.

During this first stage of her disease it seems that an expert study of her mental condition was not made; this was done some months later, when she had graduated from the gynecologic ward into an insane-asylum. The complexus of her delusions, then, was about as follows:

Starting with the operation she reasoned (if one may call it reason) that she had furnished, not a *successful*, but a *fatal* example; and this, especially, because the operation in her case had been so well done. This very fact—such was her insane logic—would induce this particular surgeon, and other surgeons who should hear of her case, to perform other operations, and would encourage other patients to submit to them. Because of the tendency, which she knew existed in some surgeons, to remove the uterine appendages for nervous conditions on small provocation, she believed that she was morally responsible in having encouraged them, and that in cases of fatal results the sin (?) would be on her head. In addition to this obliquity of thought, she suffered from her reflections on the results in her own case. She apparently felt that she had dishonored herself in submitting to an act which, to her supersensitive mind, was shameful in that it had resulted in *unsexing* her. Because of this train of ideas she had become profoundly melancholy, and had suicidal impulses.

Comments on this case may be brief. In the first place, we do not share the patient's insane idea that she or her surgeon is culpable. We freely give the surgeon credit for having acted from an honorable and, as it doubtless seemed to him, a scientific motive. We judge the case purely from the psychologic standpoint. We point out the fact that radical operations in the genital zone may be performed with a two-edged scalpel, which may cut in an entirely opposite direction from what was intended. Such an operation must be studied in its effects upon the patient's mind; not in the intentions of the surgeon, nor in the purely surgical result. We perceive clearly that in the case here cited the operation undertaken has supplied the whole pabulum for a grave psychosis—a fact to the possibility of which gynecologists are too often blind. If it were an isolated case, we might not care to draw too sweeping a deduction from it, but unfortunately we have known others like it.

In the second place, the operation, as has been justly said, is one of that small class that are condemned by their very successes. This is strikingly shown in the case of this poor woman, whose most disturbing thought is that she has furnished an example.

Finally, the case illustrates how easy it is in these patients to disturb the moral *ego* whose seat is in a wandering brain instead of in a rampant uterus.

NO STATE APPROPRIATIONS WITHOUT STATE SUPERVISION.

The work of apportioning the State money among the Pennsylvania charitable institutions that apply for assistance has grown to such an extent that it is beyond the power of the Appropriation Committees to give it the proper attention and so to divide the money that it will go to the most deserving. Representative Fow has introduced a bill that aims to regulate the disposition of State moneys to charitable and other institutions not directly under the control of the State, by providing that the Senate and House, by a two-thirds vote, shall appropriate at every session such moneys as may be left in the State Treasury after the Executive, Legislative, Judicial and other State departments, penal institutions, State hospitals and all other State institutions absolutely under State control have been provided for, to the Governor, Lieutenant-Governor, Attorney-General, State Treasurer, Auditor-General, and Secretary of Public Charities, as Trustees, to make such division among those asking for State aid as are legally entitled to it, in such proportions and such amounts as may seem to them fit and proper.

In New York City a bill making an appropriation for a lying-in asylum is the latest of a series of acts passed during the last thirty years compelling the city to appropriate moneys to charitable institutions wholly or partly under private control. In this bill an endeavor seems to have been made to conform to the provision of the new Constitution that payments by cities to charitable institutions may be authorized, but shall not be required by the Legislature; but the attempt has not been successful, and the act is clearly in violation of the Constitution. The introductory clause of this act provides that "the Board of Estimate and Apportionment *shall* annually include in its final estimate the following sums, which *shall* annually be raised and appropriated." This clause has always been construed to be mandatory, and it is under this act that the Board of Estimate and Apportionment has appropriated $1,478,723.00 for the support of charitable institutions during the present year. The lying-in asylum act *permits* the city authorities to provide an appropriation for the current year, but it will *compel* such appropriation in succeeding years, and is mandatory in the fullest sense of the term.

Thus, in the great States of Pennsylvania and New York almost the last vestige of economy, control, and justice in reference to appropriations to private institutions is thrown away, and all corporate bodies of men, with so-called charitable institutions in front of (or behind) them, are to be permitted to divide between themselves all the money not needed for legal and necessary State purposes. It is a question of rushing in and grabbing what is left, and the State is to have absolutely no oversight or control as regards the honesty or methods of spending the money. In these days of sharp competition in the hospital business, in these days when hospitals pay money to advertise for patients, could anything be more unbusiness-like, barbarous, disgusting? In New York many abuses have been brought to light as the result of such unaccounting and unaccountable use of money. One institution received in 1893 from the city $93,291, and expended but $76,803, leaving a net profit of $16,488.

This yearly scramble, with payment of lobbies and attorneys, by hospitals and asylums, is a remarkable product of nineteenth-century statesmanship. The unreasoning public thinks either that whatever is called a hospital is holy and blessed, or, with true Socialistic cunning, is very willing to get medical services for nothing. Then, again, one hungry and clamoring, but worthy, institution cannot say a word about its unworthy neighbor, equally famished and greedy, and so, regardless of merit or right use of the money, all fight for "the remains of the feast," and that one that has the best "political pull" gets the most. But all get something, because the poor bedevilled legislators or members of committee must all shut their mouths.

Now, it is an open secret among medical men that the motives of the men governing and using dispensaries and hospitals are by no means always pure and unselfish. Many hospitals are founded and carried on neither solely for the love of science, for the benefit of the profession, or for the love of humanity. It is also fast becoming recognized that treating people's diseases indiscriminately without payment therefor is often as great an injury to society as to the medical profession. All that goes under the mask of charity is by no means charitable, and nowadays discrimination in benevolence is quite as obligatory as benevolence itself. But, with the hundred of institutions of true charity that modern civilization demands of the State, but which as yet are unsupplied; with the absolute certainty of a reduced death-rate from the application of scientific sanitation; with preventive medicine guaranteeing fifty or one-hundred per cent. interest on every dollar of outlay—with these and the like knowledge of the *causes* of disease upon our consciences, it is to play the part of the most asinarian of asses to throw away hundreds of thousands, nay millions, of dollars upon the individual and ever-recurring *results* of disease—and that without a thought or a glance of subsequent control or of supervision. Why should not these hospitals supported by the State care *pro rata* for the pauper sick? Why should the taxpayers pay first the private hospital for services it will not render, and then these same taxpayers be compelled to keep their own city hospital? It is an outrage both to American financial ability and to the rare article called "common" sense. Let the fundamental principle hereafter govern all distributions of State moneys to private charitable, or supposed charitable, institutions: *No State appropriations without strict accountability and State supervision!*

EDITORIAL COMMENTS.

The Protection of Non-motormen.—The ministerial unions, we learn from the daily press, are stirring themselves up in behalf of the motormen. The motormen are too much exposed to the weather, and should, in the opinion of some ministers, be enclosed in glass houses—before summer, we hope. But the old proverb about glass houses, like most old proverbs, holds good, no matter how we twist its application. In their glass cages the motormen will have to be more careful than ever, or they will cease to be objects of public sympathy and altruistic sentiment. It is even an instance of poetic justice that the motormen who get most frozen are they who yield most to the bad American habit of being too much in a hurry, and these are the very men who most endanger the life and limb of the non-motormen.

For the world, including women and children, may for present purposes be divided into two great classes, the motormen and the non-motormen. How to enclose and protect the non-motormen is, after all, the great sociologic problem, for the non-motormen are multitudes, the motormen are but few, and the former are often quite valuable to society, many of them being highly respected and useful. They are often students and scholars, eminent divines, lawyers, doctors, judges, and merchants. Such men are often wrapped in "brown studies" in all weathers, and oblivious of danger. They may even be cogitating the invention of trolley-fenders, and meet death in such abstraction.

The non-motormen should be especially protected when, as is often the case, they are feeble and perhaps crippled by wounds received in the army or elsewhere. Their sight may be impaired also by long use of the microscope in pursuit of deadly microbes, or from too long reading to sick persons, or the study of the canals of Mars through the telescope, or other equally benevolent pursuits. They must be cared for and not left exposed to the inclemency of the trolley and its motorman. For this is worse than the winter-wind, just as the winter-wind is not less unkind than man's ingratitude. For the trolley blows and whistles and creaks and rattles all the year, while Boreas and Auster and their fellows have but a short season; and these worthies only nip the nose and cheeks and cover the moustache with frosty rime, and stiffen the toes and fingers with cold. But the trolley when it strikes is very striking, and when it nips it nips the head from the shoulders: and when it stiffens it stiffens the body with all its limbs and members, making it what is technically termed "a stiff."

Various plans have been suggested to save the non-motormen—one is a wire cage with spring buffers, which is ungainly and might tend to create a sense of isolation and a class-feeling which is so much to be deprecated. Feather cushions strapped on the prominent points of the valuable citizen have been advocated. But the plan that has received most favor is that of a well-known electrician, who proposes to have each citizen carry a small battery and sound an electric gong every few seconds to warn the motormen. This seems practical, and when once the custom of wearing the battery becomes universal it could be further utilized to furnish an electric light, and illuminate the citizen at night, thus adding another element of safety. Infants and the aged could carry lights of a peculiarly striking character, or a variation of color or of the pitch of the electric gong, or both, might be employed to distinguish men of different pursuits. The Councilmen might carry a more automatic gong, for instance, and more numerous electric lights. This idea is more captivating the more the mind dwells on it. One can in fancy imagine the streets of the future resounding by day with myriad bells of varied tone, and these isolated notes by a great natural law would seem to group themselves in a mysterious rhythm and harmony, while at night the added gleam of innumerable, ever-moving colored lights would indeed lend to the now prosaic world a missing tinge of paradise.

Serious Infection Through Slight Wounds.—The possibility of the development of profound constitutional phenomena as a result of general infection of a non-specific kind through local lesions has long been recognized and appreciated. When the chain of events in this process was not so well understood as it is now the condition was in a vague way designated "blood-poisoning." At a later date the new pathology coined the term "septicemia," and its sub-divisions "septic infection" and "septic intoxication;" while these in turn have with further progress been supplanted by the terms "infection" and "intoxication" without special qualification.

"Infection" may be defined as a morbid condition dependent upon the presence and activity of pathogenic microörganisms, and may be local or general. "Intoxication" is practically synonymous with "poisoning." It may be due to the presence in the circulation of the toxic products of an infective process, local or general, or of any other substance capable of causing toxic manifestations. It may thus be due to alcohol, to lead, to arsenic, and to other substances, as well as to the toxic products of the vital activity of micro-organisms, whether generated in the laboratory or in the human body.

Of the two conditions under consideration we have many examples. Most infectious processes—perhaps we would be justified in saying all—are at the outset local. Some remain so; others become general. All, however, are attended at some stage with intoxication. These statements are as true of tuberculosis as they are of tetanus, of diphtheria, of cholera, of typhoid fever, and of pyemia. Syphilis must be considered an infectious disease, although its cause has not yet been isolated with certainty. The distinctive characteristics of infectious diseases are their transmissibility and the possibility of indefinite multiplication of their cause. Most of the infectious diseases destroy by intoxication, rarely by general infection.

The propositions that have thus far been made would seem to apply equally to the malignant neoplasms. While in these the etiology remains an unsettled question, it is generally admitted that such growths are primarily local, and that metastasis can be prevented by timely and radical extirpation of the original growth. These facts in a measure justify the classification, tentatively at least, of malignant tumors, particularly carcinoma and sarcoma, among infectious diseases. That such new formations do give rise to manifestations of general intoxication is a well-recognized clinical fact, and one of the most pronounced phenomena of which is the almost invariable cachexia that appears.

As illustrative of some of the points referred to in the foregoing remarks we wish to cite an interesting observation in which acute nephritis developed in the sequence of staphylococcous infection of slight wounds upon the hands.

SACAZE (*Revue de Médecine*, 1895, No. 2, p. 136) has reported the case of a man sixty-five years old, and previously well, who in handling lumber received slight wounds upon the dorsum of each hand, which in the course of a few days became inflamed and angry. At the same time profound constitutional symptoms appeared, and the clinical picture of an acute nephritis developed, leading to a fatal issue. It is believed, and reasonably, it appears to us, that the train of events was due to general infection with staphylococci, which were found in the discharge from the slight wounds upon the hands.

The Medical Department of the University of Michigan.—As a way out of the difficulty in the department of medicine and surgery of the University of Michigan occasioned by the existence of a so-called homeopathic department in addition to the regular department of medicine and surgery, the Chairman of the Committee on Medicine, to which was referred the communication of the dean of the homeopathic department, proposing a form of amalgamation, as outlined in THE MEDICAL NEWS of March 2, 1895, p. 248, recommends the establishment of a chair of homeopathic materia medica and therapeutics in the regular department of medicine and surgery. It is intended that this course shall be obligatory on all students of medicine, but that no division of clinical chairs should be made according to so-called "pathies." The best men should be selected for the chairs, irrespective of dogma or peculiarity of practice. It is pointed out further that the "pathy" element exists only upon the one side, allopathy being a term in employ by sectarians and no accepted by regular practitioners. As is pointedly remarked, the assumption of sectarian designation should not be a sufficient reason for appointment to a chair of surgery or gynecology or other practical teaching position. Educational institutions under the care of the State and sustained by State funds should be administered in the interests and for the welfare of the entire community, and not for the benefit of any one class or portion. The only intelligent course for the Board of Regents of the University of Michigan to pursue is that proposed by the Chairman of the Committee to which the matter was referred—*i. e.*, the establishment of a course of lectures on homeopathic materia and therapeutics in addition to and in conjunction with the regular course of medicine and surgery.

Leukocytosis in Hypertrophic Cirrhosis of the Liver with Chronic Jaundice.—The chronic interstitial inflammation of the liver commonly designated cirrhosis, together with its morbid anatomy and characteristic symptomatology, has become well known since the time of Laennec. It is, however, only within a comparatively recent period that another form of a similar process in the liver has been described by Hanot, under the designation of hypertrophic cirrhosis. The former of these has further, for purposes of distinction, been called the portal form, the latter the biliary form, from the respective distribution of the morbid process. The clinical differentiation is based upon the diminution in the size of the liver (preceded or not by recognizable enlargement), and possibly similar changes in kidneys and spleen, together with the early appearance of ascites, and the late appearance of jaundice, in the one condition, and the progressive enlargement of the liver and also of the spleen, together with early and pronounced jaundice, and the absence or later appearance of ascites, in the other condition. As an additional diagnostic feature Hanot and Meunier (*Compt. Rend. Hebdom. des Séances de la Soc. de Biologie*, 1895, No. 3, p. 49) call attention to the occurrence of leukocytosis, which they found a constant feature in three cases of hypertrophic cirrhosis of the liver with chronic jaundice, in the absence of any extra-hepatic inflammatory process. Isolated observations by others point also to the existence of the same association. The number of white cells averaged 15,500 per cubic millimeter, as compared with 6000 under normal conditions. In other varieties of cirrhosis no increase in the number of leukocytes was observed. This peculiarity of hypertrophic cirrhosis is considered evidence in favor of its infectious nature and a means of differentiation.

The Complications of Influenza.—We are now emerging from the fifth recrudescence of the pandemic of influenza which has been followed by such devastation and which has left so much wreckage in its wake. Different epidemics have presented somewhat differing symptom-groups, and the fatality of the disease seems somewhat to have subsided, although its virulence otherwise appears to have been fairly well maintained. The nervous system has played a large and important part in the symptomatology of the disease in the successive outbreaks, and the related sequelæ have been numerous and serious.

Sansom (*Liverpool Medico-Chirurgical Journal*, 1895, No. 28, p. 118) has recently reported three cases of influenza followed by disease of the spinal cord. The first occurred in a woman, fifty-one years old, in whom a second attack of influenza was followed by paralysis of the arms and legs, with pains, tremors, rigors, and erratic temperatures, with paralysis of the thoracic muscles, arthritis, double optic neuritis, and death. The second occurred in a woman, twenty-two years old, was complicated by arthritis, presented dysesthesia and paralysis of the arms and legs, with tremors and signs of muscular incoördination, and terminated in recovery. The third case occurred in a rheumatic subject and was complicated by the development of paralysis of the arms and legs, with tremors and signs of rigidity and wasting, and also pains and dysesthesia, with symptoms of disturbance of the vagus, and finally mono-arthritis. Improvement followed treatment.

Optic Neuritis in the Sequence of Scarlatina.—A certain parallelism exists in the symptomatology of the various infectious diseases, and the nervous system seems peculiarly susceptible to the action of the poisons generated as a result of the morbid process. The optic nerve not rarely suffers in this connection, even when other parts escape. These points are well illustrated in a case reported by D'Oench (*American Medico-Surgical Bulletin*, 1895, No. 4, p. 238) at a recent meeting of the Section on Ophthalmology and Otology of the New York Academy of Medicine. In a boy, seven years old, sight began to fail during convalescence from an attack of scarlatina. The pupils were dilated, but reacted feebly to light. Both eyes presented optic neuritis, more marked in the left. The boy was drowsy and the back of the neck was tender. The urine presented no abnormality. As improvement failed to follow the administration of calomel, increasing doses of potassium iodid were directed. After a while perception of light returned in the right eye, and some days later large objects could be perceived and the pupil responded to light. In the course of a month the hemorrhages that had been observed had entirely disappeared, and vision was almost entirely restored in the right eye, though entirely absent in the left. Both papillæ were markedly atrophic. After the lapse of a year the condition of the left eye was unchanged.

Teaching Old Nerve-centers New Tricks.—Veterinary-Captain F. Smith, at the last meeting of the British Association, recited a suggestive experiment carried out upon two horses afflicted with laryngeal paralysis, the object being to secure a new nerve-supply. This was sought in the spinal accessory. The recurrent and spinal accessory were exposed and divided, and the proximal end of the accessory was sutured to the distal end of the recurrent. The results were very encouraging. In one case there was relief of the harshness in breathing and the dyspnea, and in the other the noisy breathing persisted but the distress was relieved. It would, therefore, appear that a nerve-center may possibly be educated to perform a duty for which it was not originally intended.

Picking of the Bed-clothes in Disease.—Sir Benjamin Ward Richardson (*Asclepiad, second quarter*, 1894–'95, p. 159) points out that while picking of the bed-clothes in advanced stages of disease is in general indicative of dissolution, it is not invariably so, and may be followed by recovery. The phenomenon is peculiar in that it is always the same in character. It appears in both hands as a sharp movement, as if it were intended for the picking up of something which the patient sees or thinks he sees, but of which, as a rule, he later has no recollection. Jactitation of the muscles of the forearms and hands is the most common accompanying manifestation, although there is no proportionate relationship or intensity between the two. The phenomenon is not distinctive of any particular morbid state or disease, but usually appears in connection with gradual sinking or collapse, and must be considered an ill prognostic omen.

Tracheotomy and Diphtheria.—Sir Benjamin Ward Richardson (*Asclepiad, second quarter*, 1894-'95, p. 161) offers the suggestion that tracheotomy for the relief of laryngeal stricture in the course of diphtheria is a curative measure not merely by its admission of air into the lungs, but by allowing such admission without the passage of air over a decomposing surface.

CORRESPONDENCE.

LONDON LETTER.

Death of Mr. Hulke—The Royal Society—Death of Sir William Savory and of Mr. Hake—Honors to Medical Men—The Antitoxin Treatment of Diphtheria—The Epidemic of Influenza.

Less than eighteen months ago the President of the Royal College of Physicians, Sir Andrew Clark, was struck down in the midst of his work. Now the Royal College of Surgeons has lost its official head in a manner almost as dramatic. Mr. Hulke was to have delivered the Hunterian Oration at the College on February 14th, and he had arranged for its publication in the *British Medical Journal* of February 23d. The oration duly appeared, but before that date the "blind fury with the abhorred shears" had snipped the thread of the orator's useful and laborious life. Mr. John Whitaker Hulke had stood by the deathbed of the great Duke of Wellington, who was a patient of his father, and had been a prominent figure in the medical profession of this country for more than thirty years. Though best known as an ophthalmologist, he was an excellent all-round surgeon, and but for a certain infirmity of temper he would probably have been the leading consultant in London. Those, however, who most fully recognize the sterling qualities of the man acknowledge that he was, as Thomas Carlyle's mother said of her distinguished son, "gey ill to live wi'" in a professional sense. He brooked no brother near his throne; in fact, he owed his death to his characteristic unwillingness to delegate any part of his duties to colleagues. He insisted on leaving his bed on one of the coldest nights of this bitter winter in order to operate on a case of strangulated hernia at the hospital. This operation is looked upon in the London hospitals as a perquisite of the assistant surgeons if the emergency occurs at night. Mr. Hulke's somewhat jealous insistence on his prerogative was rather what the French call the "defect of his virtues" than a fault, and though we may regret that he should have exposed himself to a totally needless risk, we cannot refuse a tribute of admiration to a man who fell a victim to his own sense of duty, however mistaken we may consider it to have been.

In Mr. Hulke the English profession has lost a man of the highest professional character, one whom, in these days of self-advertisement and questionable short-cuts to success, it can ill spare. In addition to his eminence as a surgeon he had won an honorable name by his paleontologic researches. He was twice chosen President of the Geological Society. He was also a Fellow of the Royal Society, a learned body which, though not so very long ago open to mere rank and influence, now guards its portals so strictly that admission is the seal that stamps a scientific reputation as genuine. This distinction is becoming much rarer among surgeons than it was even a few years ago. The Royal Society does not recognize mere professional work, however good of its kind, as a title to membership, and the younger race of surgeons who are nothing if not "practical" have probably discovered that pure science does not "pay." It is possible also that the power of selection is somewhat too much in the hands of one man as far as medical candidates are concerned. Professor Michael Foster is admittedly one of the brightest lights of the physiologic firmament, and he has quickened the Medical School of the University of Cambridge into new and vigorous life. As Secretary of the Royal Society, however, his activity has sometimes been less happily directed, and rightly or wrongly an impression exists that the scientific Peri who has not found favor in the Secretary's sight is doomed to wait disconsolate at the gate of the paradise of science.

Among other notable members of the profession, who have recently passed away are Sir William Savory, a former President of the Royal College of Surgeons, and for many years surgeon to St. Bartholomew's Hospital, and Dr. Thomas Gordon Hake, a cousin of General Gordon, the hero of Khartoum, and a poet whose powers were very highly thought of by men like Dante Gabriel Rossetti, Algernon Charles Swinburne, and Theodore Watts.

Oliver Wendell Holmes speaks of there being a whole museum of wigs, and masks, and lace coats, and gold sticks, that are still used in the Old World, and which the enlightened citizens of the United States laugh at honestly without affectation. In this museum the "Autocrat" would doubtless have placed titles, though, by the way, many of his countrymen who happen to be fathers of what the Scotch call a "lass wi' a tocher" do not seem altogether to share his contempt. There are two seasons—the New Year and the Queen's birthday—when a wave of excitement passes over a number of more or less worthy folk who have a keen sense that their services deserve public recognition. At these times a few titles are flung to the more favored or more persistent claimants—*pour encourager less autres*. One or two of these glittering baubles are usually given to the medical profession.

To practising physicians such distinctions have a solid value in this snob-ridden country; a title is an excellent advertisement, and vulgar rich people pride themselves on "never having anybody lower than a Bart."

when a consultant is wanted. The Queen is not always particularly fortunate in her selection of those whom she delights to honor—at least in the opinion of those who are passed over. The keeper of the royal conscience in the matter of medical dignities is her trusted physician, Sir William Jenner, a man against whose uprightness and integrity not even the *invidia medicorum*, which is the worst form of envy, can find anything to say. If in the apportionment of titles he has seemed to show a preference for the men of his own school (University College), that is probably due to the fact that he has had better opportunities of forming a judgment as to their merits than in the case of others whose work has fallen less directly under his eye. There can be no stronger proof of the real eminence of Sir Russell Reynolds and Sir John Erichsen, the two members of the medical profession whom the Queen chose to be the recipients of "New Year honors," than the fact that though both belonged to the privileged school of University College, the distinction conferred upon them has been universally recognized as due entirely to their merits. In the case of Sir John Erichsen in particular the only reason for wonder is that a title which is the highest public recognition accorded to the art of healing in this country should have been so long withheld. Sir John might say with old Samuel Johnson, that the honor, such as it is, has been delayed till he is past caring for it, or, at any rate, till he is solitary and cannot share it, for he lost his wife last year, and has no children around his desolate hearth. He is now seventy-seven years of age, and has retired from active practice. He still, however, takes an interest in matters affecting medical education and in the furtherance of the scheme of a real living and teaching university for London; and he has just been reëlected President of University College. A new (tenth) edition of his well-known text-book, *The Science and Art of Surgery*, is now in press; the first volume has already been issued. The first edition was published in 1853, and in this country alone some forty-thousand copies have been sold. In the United States the sale has also been very large. During the Civil War a copy of the work was issued by the United States Government to every medical officer in the Federal Army. It has been translated into German, Italian, and Spanish, and in the last version it has had a wide currency in South America. To be the author of such a work is a far higher distinction than the title of "Baronet," which is often given by the powers that be to supporters whose political enthusiasm expressed itself in liberal contributions to party funds.

Sir Russell Reynolds is President of the Royal College of Physicians, a dignified post, which almost demands that its occupant shall be a Baronet. The man is, however, in himself worthy of any honors that the Queen can bestow on him. His indifferent health has of late years made him somewhat less prominent in the public eye than his position in the esteem of the profession would have led one to expect; and when the presidency of the Royal College of Physicians became vacant by the death of Sir Andrew Clark greatness was thrust upon, rather than sought by, him. He began his career with a singular stroke of luck, for he succeeded to the practice of Marshall Hall, whose daughter he married.

Among the questions of practical medicine which at present engage the attention of the profession the principal are the antitoxin-treatment of diphtheria and the influenza. The former is being tried all over the United Kingdom, and, as far as present experience warrants a judgment, there is a pretty general agreement that the remedy, when used under proper conditions, is a real specific, The disappointment that followed the tuberculin "fizzle" has made us rather shy of remedies belonging to the new therapeutic *régime*—especially such as are "made in Germany." This makes the footing that antitoxin is gaining for itself all the firmer, for it is conquering prejudice as well as scientific skepticism. The experiments are carried out in the light of day, and the results are faithfully reported, whether they make for or against the new remedy. As regards the antitoxin prepared in this country by the British Institute of Preventive Medicine, and by Dr. Klein, of St. Bartholomew's Hospital, no suspicion of any taint of commercialism is possible. It would be well if the same could be said as to the German supply; the price at which Behring's preparation was at first sold caused an outcry in the Fatherland, and now a patent for the preparation of remedial and immunizing substances, "the so-called antitoxins," in England has been applied for on behalf of "Hans Aronson, of 11 Fasanenstrasse, Charlottenburg, in the Empire of Germany, Doctor of Medicine." This exploitation of scientific research for personal profit is an ugly feature in the more recent history of German discovery, which may, perhaps, help to explain Virchow's unfriendly and suspicious attitude toward it.

As for the influenza, we seem, unhappily, to be no better able to deal with it in this, the fifth epidemic since 1890, than we were on the first visitation. It is to be feared that influenza has now taken its place as an *opprobrium medicinæ*. It is worthy of note that whereas in former epidemics the medical journals used to be full of remedies, each more infallible than the other, this time, so far, no new specific has been propounded, and the advocates of the old ones are more modest in their claims. Experience has, in fact, shown that the only remedy for influenza is to go to bed as soon as the disease has got one in its grip, and stay there till it has been shaken off. One curious feature in this, as in some previous epidemics, is the partiality which the influenza-bacillus manifests for our legislators—Lord Rosebery, the Prime Minister, and Mr. Arthur J. Balfour, the leader of the opposition in the House of Commons, are among its victims. At first the bacillus seemed to make a dead set at the supporters of the Government, and as the Liberals have a very narrow majority, it appeared not unlikely that they would be beaten by the influenza. They were saved by the bacillus in the nick of time turning its attention to the Tories.

NEWS ITEMS.

Sextuplets.—A well-authenticated case of sextuplets is reported from Italy. A woman, thirty-six years old, presented in the fourth month of her second pregnancy enlargement of the abdomen equal to that ordinarily observed at the end of normal pregnancy. While straining at stool on the one-hundred-and-fifteenth day the membranes ruptured, a foot prolapsed, and a fetus was delivered by a midwife. After a brief delay a foot was again brought down, and a second fetus was delivered, and successively a third, a fourth, a fifth, and a sixth. All of the children were born alive, and moved vigorously for a time. Four were males and two females. There was a single placenta and six amniotic sacs. Puerperal convalescence was practically normal. A year later the woman gave birth to healthy twins which lived.

Charcot Memorial.—The following is a statement of the contributions thus far received to the Charcot Monument Fund:

New York City.	
Dr. E. C. Seguin	$50
M. A. Starr	50
E. D. Fisher	50
C. L. Dana	20
C. A. Herter	50
A. Jacobi	10
Frederick Peterson	10
B. Sachs	25
George W. Jacoby	10
Ralph R. Parsons	5
J. A. Booth	2
J. F. Terriberry	2
D. Webster	1
Samuel B Lyon	5
Philadelphia.	
Philadelphia Neurological Society	$150
Baltimore.	
Dr. Wm. Osler	$50
Pittsburg.	
Through Dr. T. D. Diller	$58
Montreal.	
Through Dr. Jas. Stewart	$19
Boston.	
Dr. J. J. Putnam	$5
P. C. Knapp	5
Medico-Psychological Society	25
Buffalo.	
Through Dr J. W. Putnam	$15
Denver.	
Through Dr W. T. Pershing	$10
St. Louis.	
Dr. L. Bremer	$10
Chicago.	
Dr. Archibald Church	$5
Total	$642

It is desirable that persons wishing to add to the fund send their contributions without delay to the Secretary,

DR. C. A. HERTER,
819 MADISON AVE., NEW YORK.

Dermatologic Prize essay.—The annual prize of 300 marks offered by Professor Unna, of Hamburg, for an essay upon some subject in the domain of dermatology, not having been awarded during the year 1894, the amount has been doubled for the year 1895, the subject selected for consideration being: "An investigation as to the accuracy of the propositions recently made that callagenous, elastic fibers and fixed (pigmented) connective-tissue cells dip down into the normal prickly layer."

The competition is unrestricted. Essays must be submitted to Leopold Voss, Hohe Bleichen 34, Hamburg, before December, 1895, from whom also further particulars can be learned.

The Isabella Heimath is the name of an institution in New York dedicated to the care and maintenance of aged indigent persons, of chronic invalids, and of convalescents, without regard to sex, creed, or race. It is the outcome of an institution founded a number of years ago to serve as a home for indigent women. It was soon seen that a similar institution for indigent men was needed, and accordingly, in 1889, Mr. Oswald Ottendorfer erected and equipped a splendid building, at a cost of $600,000, and other members of his family contributed a large endowment-fund for its maintenance.

The Buffalo State Hospital.—Governor Morton has nominated the following as managers of the hospital: Daniel H. McMillan and Charlotte S. Williams, of Buffalo, reappointments. Charlotte Miller Glenny, of Buffalo, in place of Sadie R. Altman. John E. Pound, of Lockport, in place of John H. Meech. Roswell Park, of Buffalo, in place of William J. Tremaine. Joseph P. Dudley, of Buffalo, in place of Henry D. Kirkover. Frederick P. Hall, of Jamestown, in place of William M. Irish.

Extirpation of the Larynx for Malignant Disease.—At a recent meeting of the Académie de Médecine of Paris Prof. Péan presented a man from whom had been removed two years previously the entire larnyx, the superior portion of the esophagus, and the anterior portion of the pharynx for carcinoma of the larynx. Breathing, eating, and drinking were made possible with the aid of a suitable prothetic apparatus. The patient could, besides, make articulate sounds, so that speech could be understood.

The Passing of the American Lancet.—With the issue of the *American Lancet* for the current month Dr. Leartus Connor, after a service of nearly twenty-four years, retires from the editorial chair, and with his withdrawal the publication of the *Lancet* comes to an end. With the retirement of Dr. Connor and the passing of the *Lancet* medical journalism loses one of its cleanest and brightest monthlies and the medical profession a most conscientious and faithful journalistic representative.

The Ohio State Medical Society will hold its semi-centennial convention at Columbus, May 15th, 16th, and 17th. In addition to the usual scientific program a lecture by Dr. Judson Daland, of Philadelphia, on "Malaria," illustrated by lantern slides, will be a prominent feature.

The Society proposes to organize a committee on State medical legislation based upon representation from all the counties in the State.

As to "Books and Pamphlets Received."—Our announcements of books and pamphlets in THE MEDICAL NEWS are designed to give notice only of the most recent literature. We can, therefore, include in the list only those lately published. Many have been sent us that were several years old.

The Influenza Epidemic.—The mortality from influenza in London for the week ending March 2d showed a very considerable further increase. The deaths attributed directly to this disease, which had been 13, 24, and 111 in the three preceding weeks, rose to 296 during the week.

No Inter collegiate Foot ball at Harvard.—At a meeting of the Faculty of Harvard College, on March 19th, the opinion was, upon vote, expressed "that no student under their charge should be permitted to take part in inter-collegiate foot-ball contests.

The Kentucky State Medical Society will hold its fortieth annual meeting at Harrodsburg, June 12, 13, and 14, 1895.

Alphonse Guerin, a distinguished French surgeon, died recently at the age of seventy-seven.

THE MEDICAL NEWS.
A WEEKLY JOURNAL OF MEDICAL SCIENCE.

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ORIGINAL ARTICLES.

THE TREATMENT OF FRACTURES.

BY F. E. BUNTS, M.D.,
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WHILE many changes and many advances have been made in modern surgery, it is somewhat surprising, at first glance, to see how little has been the change in that part of it devoted to the treatment of fractures. This surely cannot be because other branches are of more importance, and consequently attract more attention and investigation, for this is almost the only ground on which physicians and surgeons meet on an absolutely neutral plane. The treatment of fractures is of as vital importance to the physician as to the surgeon; indeed, it is, perhaps, most frequent that the physician is called upon in emergencies of this character. Every one who professes to be a doctor, no matter what his specialty, is supposed to be able at least to mend a broken bone. Both the physician and the surgeon have been more frequently called to answer suits for malpractice resulting from the treatment of fractures than from any other cause, and while other operations bring much higher recompense, few are capable of bringing heavier losses. Thus, it would seem that if from no other consideration than a pecuniary one, the correct treatment of fractures would have become a study second in importance almost to none.

A badly managed case of pneumonia or typhoid may never live to complain, and an unsuccessful case of operation for strangulated hernia or for an inflamed appendix may join the silent throng, and leave behind but few to cavil at the physician's skill; but a badly managed fracture, with its deformity or impaired usefulness of limb, will stalk through the neighborhood and through the streets, threatening its unfortunate author, defaming his character, ridiculing with its mute witness his skill, and detracting by its persistent propinquity from his reputation not only as a bone-setter but as a physician or surgeon. The reason for this lack of progress is because the indications for the treatment of fractures have been so long known, so definitely and positively demonstrated, that little can be added. It is true that more or less varied means have been devised to meet these indications, but they have, after all, differed but little in principle. The mechanical genius and enthusiasm of some have given us many varieties of splints, but they were all practically made to fill the same indications, and succeeded in this aim about as well as those of less imposing curves and more modest pretensions.

The indications for the treatment of fractures are briefly as follows: Reduce the fragments to their proper places; retain them in position; combat inflammation; restore function; relieve pain.

I shall take up the several indications in turn. First, reduce the fragments to their proper place.

At once the question arises, When should this be done? Is it best to extemporize something at the scene of the accident, or is it best to wait until the patient is at the office, or his home, or in the hospital? Obviously this depends largely upon the nature of the fracture. An uncomplicated fracture of the radius or ulna, or one of the tibia, may often be promptly adjusted and held in place by the most simple of extemporaneous splints, but, generally speaking, it is best to wait till the surroundings are more favorable for efficient work; particularly is this the case in fractures of the femur or of any bones in which the break extends into a joint. There should, however, always be a provisional splint or support applied before the patient is moved. Even without the reduction of the deformity, the support of a straight board, or shingle, or pillow, or layers of pasteboard, or the many other devices that may be at hand, will give immense relief to the sufferer, and perhaps prevent the fragments from perforating the skin, or from lacerating still more the already goaded muscles. It is often surprising to find with what facility and freedom from pain an unadjusted fracture may be handled and the patient moved when supported by the rude contrivance we may find at hand.

Again, the question of time may present itself in another light. Suppose the limb is swollen, its normal outlines lost, and the pain intense. Should an attempt be made to adjust the fragments, or should the limb be left without support of splints, and simply treated with local applications to reduce inflammation, in hopes that when this subsides a better reduction may be accomplished? There can be little question in many of these cases that the reduction of inflammation becomes the all-important indication, but we must remember that the most important thing in the treatment of acute inflammation is rest; without it local applications of heat or cold, or arnica, or lead and opium, can but prove unsatisfactory. And how are we to obtain rest? Surely the simple laying of a limb upon a pillow will not suffice. The slightest move of the patient, the incautious meddling of the attendant, may send the jagged ends of bone into the tortured tissues, and add new fuel to the flames already burning.

I believe that these cases demand splints. I grant that it is often impossible to restore the fragments to their natural position, except under chloroform, and in these cases an anesthetic is nearly always needed, but the limb can be nearly straightened, the muscles can be put in a position favorable to decrease of tension, a crushed joint may be put at rest; retention-splints can be gently applied, the limb elevated, and then, if you choose, local applications to reduce inflammation may be applied. I say, if you choose, because in my own experience it has been comparatively infrequent that other means than rest and elevation have been demanded.

"The reduction of fragments to their proper places" appears best on paper or in text-books; what we actually do is to restore as nearly as possible the normal outlines of the parts, and while this result is most frequently obtained, yet the actual restoration of the fragments to their normal relations is, I presume, of rare occurrence, except possibly in transverse fractures.

The general principle underlying the reduction of deformity caused by fracture is that of extension and counter-extension, and I have not infrequently heard both physicians and patients tell how hard a pull it was, or how many it took to get the bone straight, and of the exquisite anguish suffered by the patient while this torture was going on. I must confess I cannot understand why this should be. It would seem that in these cases, in which extreme suffering has made the muscles tensely contracted, it would be far better to give chloroform; under its soothing influence the muscles relax, and a formidable operation is converted into a simple moulding of parts into their normal relations. I believe that the more general use of chloroform would lead to better results in the treatment of fractures, for under its influence, particularly in fractures involving joints, the exact lesion is more readily made out and more accurately adjusted, and it may be well to draw attention here to the fact that when once properly reduced the tendency to displacement subsequently is but slight.

Aside from the danger attached to all anesthetics there is but one objection to the use of chloroform, and in the hands of the thoughtful or careful physician or surgeon even this does not hold; this is a tendency to too much manipulation because the patient does not feel it. We must remember that, even though unconscious, every motion of the rough ends of bone may be lacerating nerves, arteries, or muscles, therefore the least possible manipulation under any circumstance is most desirable.

It is upon the second indication for the treatment of fractures, that of maintaining the fragments in position, that the ingenuity and thought of our profession have been bestowed. For generations books have teemed with the devices of mechanics turned doctors or doctors turned mechanics, and well may we of to-day congratulate ourselves that these formidable creations of the past, however well they may have filled the indications in the hands of their inventors, are no longer considered a necessary part of our armamentarium. If there has been any advance in this part of the treatment of fractures, it has been in the return to a more simple means of maintaining the reduction of the fractures.

The invention of new splints and the naming of them after their ambitious inventors are deservingly falling into desuetude, and a splint made with projections and depressions, curves and angles to fit broken bones deeply seated or surrounded with soft tissues no longer appeals to the judgment of the physician or reaps harvests for the maker. Strips of basswood and "Buck's extension" will suffice, even in the hands of one who is not a mechanic, to treat almost any fracture except those involving joints, and even these when not amenable to treatment in the extended position are best treated by the simplest and least complicated of angular splints.

One cardinal principle must obtain, and that is, having decided the best position for the limb, to use that splint, whether internal or external, anterior or posterior, dorsal, palmar, or lateral, that best holds the fragments in the desired position, and no preconceived notion should make us use a certain form of splint when another will better fulfil the indication.

In regard to fixed dressings, for example those of plaster, I have but a few words to say. Unless the injury to the soft parts is very slight, and unless the parts can be quite accurately coaptated, and unless, further, the case can be under very close observation for the first week or ten days, I am wholly opposed to their use. The danger of gangrene from pressure in an acutely swollen leg, or the displacement of fragments as the swelling subsides, makes their disadvantage very serious, and whatever good results may have been obtained by those who use them, it yet remains to be shown that the non-permanent method is not safer, and its results not so good or better.

Meddlesome interference with fractures is to be deprecated, but still more are we to censure that fear or lack of knowledge that permits the splints as first applied to remain on indefinitely till union is accomplished. I have seen numerous instances in which, rather than disturb a fancied good setting, the limb has swollen about the splint, intense pain has supervened, and yet as long as vitality showed itself in finger-tips or toes the splints remained, till finally, when at last removed, a decubitus had formed extending down to the bone or tendons, or a tendo-synovitis established that has perhaps almost permanently impaired the use of the limb.

A fracture perfectly set shows but little tendency ordinarily to be again displaced, so that with average care the splints can be removed on the first or second day and the adjustment corrected or verified without pain or danger to the patient, and this, I believe, should, with few exceptions, be a routine practice. It is to be remembered that at about the end of the first week actual repair begins, and we should be certain before this time that the fragments are in the position that we desire them to be when union is completed.

Closely allied to the maintenance of fragments in position is the combating of inflammation. One of the greatest aids to this end is the reduction of the fragments to their place and maintaining them there, thus relieving the soft tissues of a source of constant irritation. Elevation, by bringing into use the force of gravity, and thus assisting in the unloading of over-charged vessels, is of great importance; general position also adds its share in securing the comfort of the patient.

Of all local applications, heat and cold demand the greatest consideration and confidence. It has, I think, been altogether too common to decry the use of cold in treating inflammation resulting from fractures. The same judgment is here required as to whether cold or heat is best as is required in the consideration of the treatment of any other injury. Some cases, such as those occurring in the aged or in delicate or rheumatic persons, at once suggest to us the impropriety of using cold; while in the healthy or in the plethoric, particularly if the fracture extends into the joint, ice-cold applications are of the greatest benefit, and their use cannot be too strongly urged. Of course, a time comes when the continued use of either heat or cold is not indicated; but this is a question whose decision must be made by the attendant, and for which no fixed rules can be laid nown.

The majority of topical applications owe their value here, as they do in other inflammations, to the evaporation and consequent cooling of the surface that occur when they are used, and they are therefore to be regarded as entirely secondary in efficiency to the use of cold or heat.

I here mention the relief of pain as one of the indications in the treatment of fractures, because I desire to emphasize the fact that properly adjusted fractures rarely cause much pain, and the administration of an anodyne for this purpose, except possibly during the first day, is not ordinarily necessary. Persistent and excruciating pain is always, in my own practice, an indication for prompt removal of dressings and careful revision of the splints, paddings, and bandages, or the readjustment of the fracture. A very slight change in the dressing will often give instant relief from pain, and if the importance of this fact were more generally appreciated there would be less frequent administrations of anodynes and more careful investigation of the dressings, and consequently more carefully adjusted fragments. Serious pain at the seat of fracture persisting after the second day is almost invariably due to a faulty replacement of fragments, and is in all cases an imperative indication for readjustment of splints or bandages.

The last indication, that of restoration of function, must be kept in view from the very first. Not every fracture will permit of complete restoration of function. Important structures may have been injured or joints entered that may render it obvious from the start that complete restoration can never occur; but we must always strive for the best under existing circumstances. The causes of impairment of function are various, and among the more obscure ones are to be mentioned injured nerves and compressed and obliterated vessels. The most common cause in uncomplicated cases, however, seems to be long-continued fixation of the neighboring joints, rendering them stiff and painful when the time comes for using them. Fortunately, as this is the most common cause, so it is the one most easily counteracted, and that by the use of frequent massage and early passive motion of the joints. I grant that this consumes more time than we often feel inclined to bestow, but the benefit to be derived is none the less positive. In connection with this I wish to urge the early abandonment of splints. Certain complications, such as non-union or fibrous union, may interfere with all rules; but, as a general statement, from two to three weeks for children, and from three to four weeks for adults, is a sufficient length of time for a splint to remain on. This would hardly apply, however, to fractures of the femur, in which it is not infrequently necessary to maintain the splints for six or eight weeks, or even longer, though here too the general law holds that dressings should be removed at the earliest possible moment and massage and passive motion instituted. While early passive motion in cases of fractures extending into the joint is opposed by some, and while there undoubtedly exist some theoretic objections to it, yet as the outcome of practical experience I can most heartily recommend it, and constantly make use of it in my own practice.

The discussion of the treatment of compound or other than simple fractures, or of the many complications that may occur at the time of the injury or subsequently, is not attempted in this paper. I have endeavored to confine myself solely to the general indications for the treatment of simple fractures, and as a summary, desire to call attention to the following propositions:

1. The indications for the treatment of fractures are]positive and fixed.
2. All fractures should be adjusted at the earliest possible moment consistent with the obtaining of proper appliances or assistance.
3. We should not wait for inflammation to subside before placing the fracture in some kind of a retention-apparatus or splint.
4. Chloroform should be administered more frequently to facilitate diagnosis and adjustment.
5. When properly reduced there is comparatively slight tendency to redisplacement.
6. Simple splints are to be preferred to moulded ones.
7. Use that splint that best fulfils the indication, regardless of preconceived ideas.
8. Non-permanent are ordinarily to be preferred to permanent dressings.
9. Dressings should be opened up and fractures examined not later than the second day.
10. Rest and elevation are the best means of combating inflammation.
11. Cold is not contra-indicated in robust patients, particularly if the fracture extends into a joint.
12. Pain is best relieved by revision of the dressings.
13. Early passive motion and frequent massage are the best means of restoring function.

THE TREATMENT OF EPILEPSY.

BY W. H. HATTIE, M.D.,
ASSISTANT SUPERINTENDENT, HOSPITAL FOR THE INSANE, HALIFAX, N. S.

THE term auto-intoxication has become very familiar to physicians within recent years. Bouchard's work upon the subject has circulated widely, and has indeed done much toward the modification of our views of certain disease-processes. After many years of patient research morbid anatomists have been compelled to admit that it is possible for a man to suffer for years from a disease which may manifest an almost constant symptomatology, which may cause an immense amount of suffering, which may even incapacitate him entirely from his daily vocation, and yet which may leave absolutely no trace of disorganization of tissue to be detected by our present methods in pathologic investigation. There are several common disorders which are so characterized, and which have, in confession of ignorance, been classed as "functional." It would appear now that it is in this class of diseases the theories of auto-intoxication find especial adaptation, and probably no disease indicates more strongly the likelihood of a species of self-poisoning than that peculiar manifestation of disordered nervous action known as epilepsy. As yet, unfortunately, we have no definite proof that can be brought forward in support of the theory; but the theory is really so plausible, and it seems to offer such reasonable explanation for otherwise inexplicable conditions, that we bid it welcome.

The term auto-intoxication is not, perhaps, a good one. It scarcely expresses all that it is intended to imply—that the poisoning may not be due alone to defective elimination of toxic products of man's own metabolism, but that it may also depend upon the excessive absorption, particularly from the digestive tract, of the products of the bacteria, etc., which, under any conditions, are present there. "Insufficient elimination" possibly covers the ground better, but is less wieldy than the generally used term.

We look upon convulsions, no matter what their nature, as the result of a sudden and violent discharge of nervous energy from the cells of one or other portion of the central nervous system. As to the cause of this discharge, we have no definite knowledge. It is very probable indeed that there is a lack of inhibitory power in the motor cells, but there must be a pathologic state underlying this lack. The microscope has given no positive information on this point. Bevan Lewis, it is true, has claimed that by adopting a certain technique, a fairly well-defined and nearly constant vacuolation of the nuclei of the second layer of cortical cells can be made out, in the post-mortem examination of an epileptic's brain. But other observers have detected similar changes in the brain of animals after excessive fatiguing exercise. It seems reasonable, therefore, to assume that the condition that Lewis describes is consequent upon rather than causative of the epileptic discharge. I think it is much more than likely that if convulsive seizures are due to any morbid anatomic condition, the very perfect apparatus with which we are now provided for the study of the tissues would long ere this have permitted us to demonstrate such a condition so conclusively that there could be no room for dispute. We are, therefore, simply driven to the conclusion that the pathologic state underlying these seizures cannot be histologic, and that we must look in some other direction for the discovery of the cause of these very distressing "nervous storms."

It is quite natural, in this day, for us to turn our attention to the chemic side of the problem of life. The recent advances in the chemistry of both physiologic and pathologic processes have not been less wonderful than they have been practical, and we are led to expect much from the workers in this field. But we need scarcely take into account the most recent work in order to form a very good hypothesis as to what constitutes the condition underlying the convulsive habit. Even with little knowledge, we can readily conceive that the lack of inhibitory power which (in "idiopathic" epilepsy) we believe to exist in the motor cells may be the result of mal-nourishment consequent upon the insufficient removal of some waste product (*i. e.*, toxic material) which, as a mild but constantly acting irritant, tends to make unstable the cerebral cells. I confidently believe that it is toward the discovery of such toxic material we must direct our attention if we are to find the cause of the trouble.

Perhaps the case is stated rather bluntly when the instability is attributed merely to a defect in elimination. There may be an excessive production of the toxic material. This question, however, does not affect the treatment which the assumption suggests. If it is granted that toxic matter is allowed to accumulate, we can readily understand that a certain point will in time be reached when the nervous centers can no longer stand the pressure, and when a convulsion will be determined. Or it is quite conceivable that the cells, rendered unduly irritable by the continued presence of the effete material in quantity which is insufficient in itself to cause discharge, may react violently to some slight external stimulus (as a loud noise or sudden flash of light) which ordinarily would have no such effect. In either case, the discharge is followed by a temporary restoration of cell-stability. This, I believe, is due to the fact (ascertained definitely by Horsley) that the brain is hyperemic during a convulsion—a condition which certainly must aid in the elimination of the toxic material. The increase in the urinary secretion, so frequently noticed after a fit, would also appear to indicate an extra elimination of effete tissue-products.

The theory merely supposes a close analogy between the convulsions of epilepsy, of uremia, of asphyxia, etc. No matter what muscles are implicated in a convulsion, and no matter what we have supposed the underlying cause of the convulsion to be, we have been accustomed to regard all convulsive seizures as due to abnormal functioning of cells in some part of the central nervous system. The cause of this abnormal functioning is not yet apparent, but there is much reason to suppose that it is due to some process of auto-intoxication.

Physiologic experiment has shown that certain substances found in urine, as kreatin, kreatinin, etc., when sprinkled over the motor cortex of experimental animals, will induce convulsions that are followed by coma. Normally, from nervous tissues certain chemic substances may be isolated which bear close resemblance in composition to kreatin; in fact, this agent itself has been separated, as also have xanthin, hypoxanthin, etc. It is interesting in this connection to note a case not long since reported in The Medical News, by Dr. B. K. Rachford, of Cincinnati, in which there were peculiar epileptoid attacks, and in which it was found that hypoxanthin appeared in marked excess in the urine.

In a *Note on Convulsive Seizures*, which I recently published, there occurs the following:

> "Our knowledge enables us to classify convulsions into those that *are* and those that *are not* due to some evident irritant. Those fits following trauma of the brain, those associated with tumor, abscess, or other condition in which structure is disturbed (as in apoplexy, meningitis, general paralysis of the insane, etc.), class under those due to an evident irritant. The so-called idiopathic epileptic fits, major and minor, the convulsions of hysteria, etc., might be placed in the list of those in which there is no evident irritant. And in some conditions that have long been regarded as due to the retention of effete matters in the system—as in what has been called uremia, as well as in the early stages of many acute disorders regarded by modern pathologists as toxic (bacterial), we find convulsions to be a frequent and prominent symptom. It is true that these convulsions differ materially from one another in their appearances, but the differences are really minor, and depend upon the situation of the cells in which the discharge of nervous energy originates. I think it is reasonable to suppose that in every case the cells are excited into discharging—or at least made extraordinarily unstable—on account of irritation, whether that irritation be evident as a tumor or gross lesion of some kind, or whether it be the more subtle but equally capable effect of some retained poisonous secretion."

In the therapy of epilepsy our theory at once suggests the adoption of eliminatives and the administration of drugs that tend to prevent, or at least to limit, putrefactive change in the intestine, so that from this source, at any rate, there may be no reabsorption of poisonous refuse. An occasional diuretic, a frequent purge, and once in a while a diaphoretic, aid in increasing the amount of matter eliminated. Blood-letting may be adopted in suitable cases for this end. The use of intestinal antiseptics is unquestionably desirable. I have tried β-naphthol and salol faithfully and with benefit, but have abandoned both for cinnamon-water, which can be given freely, and which has a really powerful effect in checking decomposition in the intestinal tract. Chloroform-water is theoretically good, but I have not yet had sufficient experience with it to recommend its administration for this purpose.

Of course, the salts of bromin yet remain our sheet-anchor in epilepsy, and I confidently believe in their curative properties. Bromids are rarely given a proper trial in this disease. If the cause of the disorder can be definitely removed—and this is surely the first indication in any treatment—there may still remain the *habit;* but this can be overcome by the judicious use of one or other salt of bromin. Of course, the more firmly fixed the habit has become the more difficult will it be to effect a cure, but I have seen perfect recovery follow careful treatment by bromid in cases in which the disorder had not been of very long standing. As to dosage and choice of salt, I can add nothing to what has already been written, except that which is shown in the following table, the sodium-salt being given in each instance in doses 25 per cent. larger than the potassium-salt.

My experience with epilepsy has been limited almost entirely to the practice of the Nova Scotia Hospital for the Insane. Here we have a number of epileptic patients, and in their treatment almost every drug ever recommended has been tried. Nothing, however, has produced such good results as one or other of the bromids, which we generally prescribe in doses of from 25 to 40 grains twice daily. In some cases, particularly those in which nocturnal fits are common, we combine chloral hydrate in doses of from 10 to 12 grains, and in others we use digitalis in addition to bromids.

For some time I have been carefully studying the effect of different treatments, and I submit in tabular form the results in eight patients who have been continually under observation for nearly three years:

TABLE SHOWING AVERAGE NUMBER OF FITS PER PATIENT PER MONTH ON DIFFERENT METHODS OF TREATMENT.

Patient.	Ordinary treatment by bromids, 9 months.	Varying treatment, 8 months.	Potassium bromid combined with intestinal antiseptics, etc. 12 months.[1]	Sodium bromid combined with intestinal antiseptics, etc 4 months.
No. 1 . . .	33.0	36.0	29.6	23.8
" 2 . . .	9.8	12.5	7.85	7.0
" 3 . . .	1.4	1.5	0.41	
" 4 . . .	17.0	8.4	2.1	0.5
" 5 . . .	14.0	12.6	8.33	4.5
" 6 . . .	5.7	8.9	5.1	3.0
" 7 . . .	10.2	7.25	8.42	5.75
" 8 . . .	5.1	4.12	2.0	1.5

The varying treatment adopted during eight months of 1893, the results of which are indicated in the second column of the table, included the use of β-naphthol alone or in combination with potassium bromid, sulfonal and salol, potassium bromid and salol, potassium bromid alone, etc. The details of this treatment are not very instructive, and as they are tedious I will not give them.

It will be noticed that in almost every case there has been a steady decline in the number of convulsions. The results indicated in the last column are, perhaps, to be attributed more to careful attention to the eliminative part of the treatment than to any superior merit of the sodium over the potassium salt.

Patient No. 1 is an Indian, the only one of his race that I have known to be epileptic. As will be seen, his fits are very frequent, and strangely enough we have found them to be particularly frequent in May of each of the five years that he has been here. In that month of last year he had 120 convulsions. He has on several occasions had as many as twenty fits within twenty-four hours, but he never develops a true status epilepticus. Patient No. 3 had just completed twelve months of treatment with potassium bromid and cinnamon-water, and was seemingly in his usual health, when he had a convulsion, which was not noticed to be different from an ordinary epileptic seizure. As, however, he did not rally so quickly as usual, I was summoned and found him comatose. A catheter was passed, and the small quantity of urine obtained was found to be rich in albumin. In spite of treatment the coma persisted, and death followed eighteen hours after the convulsion. The incident is instructive, both from the closeness with which his last convulsion (which must have been "uremic") resembled the usual epileptic seizure, and also as showing that post-epileptic albuminuria must not always be regarded lightly.

I have tabulated these eight cases because they were on a routine treatment. Several other cases have been under my observation in which varying forms of treatment were adopted, as they appeared to be indicated, and some cases could not be treated medicinally on account of their mental condition. These last-mentioned cases have remained *in statu quo*, so far as the epilepsy is concerned, while the others have progressed favorably in direct ratio to the thoroughness with which the treatment could be carried out.

I might just state in brief summary that an average of 12.3 fits per patient per month under potassium bromid alone, or in ordinary mixture, has been reduced to just about half that number during the eighteen months that we have been combining intestinal antiseptics, etc., with the ordinary drugs. This result I regard as a very strong argument in favor of the theory of auto-intoxication in this disease.

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[1] During this period treatment was suspended on one occasion for twenty days. The result was a large increase in the number of fits, which made the averages in this column higher than they would otherwise have been.

In presenting this short paper to the profession I have to claim the indulgence which a preliminary communication always merits. I trust in the near future to be able to bring forward experimental evidences of the correctness of the theory which has influenced the treatment of the disease so materially in the hospital with which I am connected.

DISEASED CONDITIONS OF THE OVUM LEADING TO WATERY DISCHARGES FROM THE UTERUS.[1]

BY W. J. WILLIAMS, M.D.,
OF ADEL, IOWA.

IT has been the experience of almost every obstetrician to be called to the bedside of his patient to find a history of watery discharges from the uterus, pregnant or otherwise. It may have been with a feeling of uncertainty that he has attempted to assure his patient of the prognosis, and it may have been his experience to discover after a while that he has made a mistake fraught with danger to a trusting patron, or it may be that his over-confidence that it was but a simple affair may endanger the confidence of patient and friends by giving a false security leading to a disastrous outcome. With a feeling that we sometimes make the mistake of improperly weighing these seemingly small matters, and with a hope of provoking a profitable discussion, I have ventured to make a study of this subject.

It would seem that the best understanding might be attained by an inquiry into the pathologic conditions of the different tissues that may lead to such discharges, and among these chronic diffuse endometritis first claims our attention. Schroeder considers this to consist in a chronic diffuse proliferation of the decidua vera and reflexa, and in this he has been followed by the best students who have given the subject careful examination. Under the stimulus of increased blood-supply during pregnancy this granulation-tissue takes on additional and unnatural growth, and the thickened, indurated decidua developing upon this rank soil, so to speak, is liable to undergo cystic degeneration. The mucous coat becoming still more thickened, many of the changed cells are choked off, and in the deeper layer the cavities are increased in number and size until the cysts occupy most of the substance.

Of polypoid endometritis, which by some is considered but an advanced degree of the previous condition, and by others is held to be the result of pathologic conditions, such as syphilis and the changes following the acute infectious diseases, we have a considerable number of cases recorded, characterized by great thickness of the mucous membrane, which is studded by prominences of varying size and varying degrees of elevation, from smooth wounds scarcely raised above the surface to those that are pedunculated and sessile. This complication of pregnancy leads usually to early abortion, following a history of frequent aqueous and bloody discharges, and may account for that peculiar tendency to throw off the results of conception in the earlier months so often observed in syphilitics and those attacked by the infectious diseases.

In regard to catarrhal endometritis, the German authors Schroeder, Spiegelberg, and Braun, hold the opinion that chronic inflammation of the decidua may, aside from the cellular proliferation mentioned, produce an abnormal liquid secretion. But Stopfer, whose opinion is much respected, holds to two sources of this collection, the traumatic and the catarrhal. Collecting at various points, and between the different layers of the membranes and between the membranes and the uterine walls, and with contents varying in consistency from that found in cystic degeneration and in the hydatids, they give rise to discharges varying in amount and simulating the breaking of the waters at full term. The source has been held to be by transudation from the amniotic cavity by secretion from the uterine walls and by transudation from contiguous bloodvessels.

Among the diseases to which the placental structure is subject that may lead to these conditions must be mentioned placentitis. This inflammation, leading to a weakened condition of all the tissues, including stroma, bloodvessels, and the villi, may lead to extravasations called placental apoplexies. In these irregular cavities filled with blood the solid elements degenerate or are absorbed, leaving the cavities filled with serum-products in the form of a slightly colored and often viscid liquid. The fetus not surviving the changed conditions, there result the so-called carnified moles, which sojourning *in utero*, and the contents undergoing pigmentary and other changes, we have a cystic mole remaining, with cavities filled with a sero-sanguinolent fluid from the blood-serum.

In the last division, that of the so-called hydatid mole, we have the most interesting cause of these discharges. This condition is most likely to occur during the last half of the childbearing period, and that uterine disease was the determining factor has been the prevailing opinion. Later investigations, however, have tended to disprove this by showing that by far the greater number of cases present no such diseased conditions.

The most important and interesting vital property in these cases is that the vesicles consist of living, growing tissue-elements. Fatty degeneration of the epithelial covering and connective-tissue stroma takes place only to a minor degree, thus supporting the theory of their origin from other than dead masses of tissue in which these changes would be marked. On the contrary, an unusual proliferating tendency is found, while they receive their nourishment directly from the uterine wall. And while chorionic villi and all attachments are nourished from vessels of the allantois, this mode of blood-supply cannot exist in vesicular moles, because in cases of total destruction of the chorion there is no fetal circulation, and even in *mola partialis* the vessels to the degenerated part are obliterated *in toto*.

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[1] Read before the fourth session of the Western Association of Obstetricians and Gynecologists, December 27, 29, 1894, Omaha, Neb.

The diagnosis and treatment become of interest when we consider the inroads upon the vitality of the uterine wall, the liability to form adhesions, difficulty of separation, and danger of alarming and uncontrollable hemorrhages. In all the varieties in which the liquid is contained in the cavities between different layers of membranes and between the membranes and the maternal structures proper there is little in the way of symptoms except that the woman during the last of a seemingly normal pregnancy is surprised by a jet of liquid usually of considerable amount, followed by constant oozing, leading her to fear the oncome of labor; yet in the absence of the usual pains these fears are usually set at rest, and the recurring attacks of the same character may settle the diagnosis. The presence of catarrhal metritis at the time of conception may be of value as a determining factor. The prognosis is good, neither health nor pregnancy being compromised; and the treatment should be expectant and watchful of uterine contractions.

Of all other varieties the diagnosis is difficult, the symptoms depending upon obscure conditions. In many cases there may be such a grouping of symptoms as may lead to an intelligent and safe position. Rapid and exaggerated development of the abdomen not in accord with the period of pregnancy is of value, but alone may give a suspicion of malignant growth or ovarian cyst. Small and frequent discharges of a peculiar type have weight, especially when there is alternation of bloody and aqueous flows, commencing about the second month. To the careless this may lead to a diagnosis of carcinoma of the cervix or vicious placental insertion. When we have a combination of these during the first months, when the development is easily appreciated, and a faulty insertion is not liable to give trouble, we may easily direct our mind to those morbid conditions of the developing membranes that are likely to occur. Couple with these a history of tender uterine walls and a history of painful contractions of the irritable surface, and we have a grouping of symptoms of great diagnostic value. All conditions the result of extravasations and of degenerations that are extensive, leading to cysts and carnified moles, cause cessation of growth of the fetus, and there being no proliferation-tissue we have no increase in size, while parturition is delayed, and yet menstruation is interfered with until, no longer tolerant of its contents, the uterus rids itself of the mass. On the contrary, in those cases in which there is an excess of proliferating tissue we have great increase in size and painful contractions from over-distention, producing discharges of water, and sometimes of the vesicles themselves. Combinations of degenerated tissues as complicating pregnancy make the diagnosis more difficult, and require more discretion, lest we fail to be clear, and hazard the life of the fetus which might go to full term.

Upon a careful and proper diagnosis depends the proper application of treatment. In those cases of simple hydrorrhea, and when extra sacs of water exist as incidents in a pregnancy otherwise normal, no concern need attach, save to make certain the diagnosis and to assure those interested that at the proper time all will be well. Once determined that pregnancy continues in the presence of cystic degeneration of the membranes, and our position must be tentative, with a constant watchful care for impending danger. Under these changed conditions the fetus, having its wellspring of nourishment encroached upon, may shrink and be absorbed, or, escaping this, may go to term the worse for its limitations. At all times this development on an over-sensitive uterine surface is a menace to the integrity of the tissues. Responding to the rapidly increasing contents, the irritation is liable to set up contractions, resulting in complete expulsion, fraught with danger from an adherent mass planted upon an over-weak uterine wall, where the close and unnatural connection with the maternal circulation may, and often does, result in severe and dangerous hemorrhage. When fetal vitality ceases, nothing is gained by waiting, and the uterus should be emptied. In all cases uncomplicated by pregnancy, be the morbid condition the result of placentitis, of extravasation, or of proliferating cystic degeneration, when our diagnosis is certain our position must be that of active interference. To allow the condition to continue is to risk accidents that are hazardous to life, and delay may only add the weakness of tissue and loss of vitality accompanying the anemic condition that invite trouble through septic infection. Thorough tamponning of the vagina, repeated every twenty-four hours until dilatation takes place, or hemorrhage occurs, with a careful separation with the finger, and removal, are the measures indicated, and nowhere is the thorough and painstaking application of antisepsis more indicated than in these cases. Careful search for adherent masses and subsequent tamponning of the uterus when vessels fail to contract are always indicated, while the more close and unnatural connection with maternal structures will indicate more care in the use of the intra-uterine douche.

ECZEMA OF THE SCALP.

BY J. ABBOTT CANTRELL, M.D.,
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OCCURRING upon the scalp, eczema is usually found to be of the erythematous, the vesicular, or the pustular variety, and the treatment will depend somewhat upon the condition present, whether it is of long standing or of only a few days' duration, the age of the patient, as well as his natural and daily habits.

The erythematous variety is very likely to be of long standing; it is more usually found in those of middle or advanced life, and is usually connected with the same condition as it occurs upon the face—in fact, spreading from the face. When this variety does attack the scalp, and when not in connection with the disease as existing upon the face, it is usually seen in patches, which may be single (the general rule) or multiple. These are found to be very irregular in outline; the disease may even attack the whole scalp, and no part escape. When this takes place the condition is usually very disagreeable, as well to the patient's friends as to himself. It attacks all of the hairy part of the scalp; there may be a dry condition, or it may consist entirely of the moist variety of the disease. If it is the latter, this, with the scratching and tearing of the patient for relief, gives rise to a very distressing condition. The presence of blood due to the scratching and the natural discharge of the disease bring about a matted and crusted condition of the hair that causes the patient much discomfort.

The vesicular variety usually occurs at or near the temporal region, immediately above the ear and in the occipital space. The lesions, if seen early, are found to be discrete and distinct; but if allowed to proceed for some time before coming under the physician's observation, they will be found coalesced and covered with a conglomerate crust. There may be a few discrete vesicles around the borders of the patch; the part will be itchy and feel disagreeable, and the patient will scratch or tear at the part and cause the flow of blood as well as serum; the hair becomes matted, the parts inflamed and somewhat edematous. From this we are likely to find the part bulged out to some extent from the normal position of the head. When this variety occurs in the occipital region it is usually found in connection with or caused by pediculi, for, owing to the great amount of hair that is usually found in this locality, the part is warm and consequently sought by these parasites, so that in a short time there will be found a very bad condition, with a foul-smelling odor. This variety is likely to be found in the very young or the very aged.

The pustular type is usually a disease of childhood, rarely, as a rule, being witnessed in those of more mature years. These lesions are seen scattered throughout the scalp, and thus differ very much from those of the vesicular variety, which is more likely to form patches. Pustular lesions do not coalesce, but are found to be distinct and discrete, each being remote from its nearest neighbor. There may be only a few (the usual rule), being seen in great numbers in only a few cases, although new ones are continually forming. They are mostly found at the openings of the hair-follicles, where the discharge mixes with that from the gland. Occurring in those of very tender years they rupture early, soon becoming crusted, so that from the color of the pus and its combining with the secretion of the sebaceous glands, there results a greenish yellow crust, which, if not removed early, will collect in one large mass, matting the hair, and, in fact, binding it down so closely to the scalp that it can hardly be lifted up at all. In fact, one would almost think it would break rather than bend.

Naturally the inflammation will be increased by leaving these crusts in this position, and they thus cause great pain and suffering. This variety is likely to undergo spontaneous involution—that is, it may disappear without treatment or cause—an unusual termination, however, of the disease.

The usual condition is that in which we are confronted with enlargement of the glands in both the vesicular and pustular types. The glands may increase in size and become almost as large as an ordinary furuncle, but in only rare instances do these glands break down. Those usually affected are the post-cervical and the occipital, and in very aggravated cases those of the preauricular region may also be involved. Sometimes both the vesicular and pustular varieties become so aggravated that they resemble the ordinary plica polonica.

The treatment of these conditions must consist in both internal and external medication. Occurring in either a child or an adult, the natural secretions of the body must necessarily receive proper attention; the intestinal canal must be kept clear of all accumulations; the kidneys must act in a normal manner; the patient must have the normal amount of sleep; he should wear proper clothing during the waking and the sleeping hours, both in winter and in summer; he should eat carefully selected food, and in normal quantity. If a child, it naturally must be given a milk-diet at all times, and there must be no change from this rule. Care should be taken that he is not given potatoes, an article which mothers usually think a child can eat and digest. If an adult, he should refrain from certain foods, especially those that cause intestinal derangements, such as fried food, pastries, stewed fruits, and pork, no matter of what kind or cooking. He should be allowed as much bland food as he may want, so that he does not overload his stomach, and this will consist of all green fruits, roasted or stewed meats, a few potatoes, either white or sweet, tomatoes and all those articles of diet that have a tendency to operate upon the intestinal movements or increase the flow of urine, such as cabbage when uncooked, spinach and kale. While this list is not a full one of what the patient may or may not have, it gives a general idea of what is necessary for his comfort, and the nearer we keep to these lines the better the result will be.

If the patient should be one whom it would be advisable to give a laxative or a diuretic at any time, one of the following methods may be carried out. I am usually in the habit of giving a tonic aperient, and one on which I mostly rely is as follows:

R.—Magnessii sulphatis	. .	℥j.
Ferri sulphatis	. . .	ʒss.
Acidi sulphurici dil.	. .	fʒj.
Sodii chloridi	. . .	gr. x.
Infusi quassiæ	. q.s. ad.	f℥iv.—M.

My usual plan is to begin with one tablespoonful of this mixture every morning about one-half hour before breakfast, in a goblet of water, which, preferably, should be warm. Should this prove insufficient to move the bowels properly I usually repeat the dose immediately before the evening meal. If the kidneys are not secreting freely, I have one-half dram of potassium acetate added to the morning dose. When this does not give the proper amount of urinary secretion I give the potassium salt every three hours, in doses of from ten to thirty grains. Should there be any complication, this also receives the necessary attention. Carlsbad, Friedrichshall, and Hunyadi water may be better borne than the formulæ given, or cascara sagrada will take the place of any or all.

The general condition may demand a tonic; if so, no better advice can be secured than that suggested by the disease itself. This must be decided upon in each case, as no general rule can be adopted to govern this portion of the treatment.

In infants the first step in the treatment will be the use of something to remove the accumulated crust, which may be accomplished by either sweet-oil or a starch poultice, preferably the former, if it suffices. This should be used first, owing to the early rupturing of the pustules and the discharge of their contents, as the crusts and admixture with the sebaceous secretion obscure the state of the inflammation. After the removal of the detritus, then and then only can we fully appreciate the actual condition. Such remedies as resorcin, or calomel, or acetanilid will undoubtedly give the most prompt relief, and the best manner of applying them will be as follows: They may be given in ointment-form with petrolatum, or the ointment of zinc oxid in the proportion of twenty grains to the ounce, applied twice or thrice daily, the part being covered with some dressing that prevents the little patient from irritating the part by scratching and tearing.

Should there be pediculi in connection with the disease I usually advise the use of the fluid extract of staphisagria in the proportion of ʒij to ℥vj of dilute acetic acid, and then the application of the ointments named. I never, as a rule, advise the cutting of the hair.

When occurring in the adult it may be the best advice to use first a dressing of the lotio nigra of the Pharmacopeia, or a wash of a saturated solution of boric acid in water; this should be applied for at least one-half hour at each dressing, to remove the accumulations of the part and to some degree to make an alteration in the degree of inflammation, following this with the use of some drug that has astringent properties, such as one of those mentioned when referring to the scalp of a child. We may use one of a more stimulating character in those cases that show some chronicity, such as salol, salicylic acid, or even phenol. I prefer at times to employ a very strong ointment in the more chronic cases, using from ten to forty grains of salol or salicylic acid, and adding ten grains of phenol to the ounce, thus getting rid of the disease and giving the patient relief from the itching that is always present.

315 SOUTH EIGHTEENTH STREET.

CLINICAL LECTURE.

AN INTERESTING CASE OF LEPROSY.

BY JOHN V. SHOEMAKER, A.M., M.D.,
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C. B., male, aged twenty-two years, colored, a native of one of the West India islands, recently applied to the Skin Department of the Medico-Chirurgical Hospital. His history was as follows:

Seven years ago he noticed, for the first time, a gradual change of color in the skin situated over and below the right knee-cap. It was not long afterward that he discovered a numbness or diminished sensibility in the affected surface. Very slowly the pathologic alterations extended. The patch in which pigmentation was deficient grew larger and the numbness deepened into anesthesia. At length the loss of color became uniform upon the anterior surface of the limb from knee to ankle, and also for some distance above the knee. The change in appearance was more decided above than below the knee, but the area involved was not so extensive. The alteration in the color of the skin proceeded very slowly during the first three years. For the last eighteen months, however, it has gone on more rapidly; within that period the thighs have been invaded, and it has also made its appearance upon the buttocks. The last manifestations were at first in the form of roundish spots which enlarged in all directions. About two years ago the same process began upon the left leg. The spots upon this limb were anesthetic from the beginning, but the aspect was always, upon close inspection, a little different from that upon the right side. The skin of the right leg was always smooth; upon the left limb the color of the lesion has always been a little darker and the surface somewhat roughened. Nevertheless, upon either side there is a marked contrast of hue between the diseased patches and the adjacent normal integument. The patient states that upon the left limb there is a tendency to slight scaling. About four years ago the skin of the right ala nasi became erythematous and the seat of a slight tingling and smarting. A short time before this manifestation he had received a sharp accidental blow upon the nose in the region where the redness developed. Every month an exacerbation occurs, and the nose becomes swollen and more intensely red. In the intervening periods there is less turgescence, but the red spot never disappears. Three years ago a similar spot of erythema made its advent upon the left hand over the metacarpophalangeal joints. At times this flush fades so as to be scarcely distinguishable, and then again it will become more vivid. The man is of the opinion that the patch upon the hand is less perceptible on chilly days and in winter, while in summer it grows quite red. There is diminished sensibility, but not complete anesthesia, in this lesion upon the hand. It has extended into the clefts between the fingers. At the same time this surface is very sensitive to hard knocks, and the same is true of the lesions upon the limbs. The palms are free from abnormality.

The patient is of moderately dark complexion. He has been in the United States for four years, during which time he has lived in our Northern seaboard cities. He has been in Philadelphia for three months. Sometime ago the skin upon the dorsum of the right foot near the toes became pale and anesthetic, the subcutaneous tissues were subsequently diseased, and necrosis attacked the three middle toes, which, two months ago, were amputated. The soles of both feet are more or less anesthetic; upon the right side sensibility has entirely departed and upon the left it is blunted.

All the lesions itch considerably of late and cause the patient to scratch. The man states that this has led to the excoriations and the formation of small scars. He has never noticed any pallid patches, pain, or anesthesia in the mouth. He is habitually abstemious in regard to drink. A small quantity of any kind of liquor produces a brief feeling of exhilaration, which is speedily followed by a disagreeable sense of depression. He has not, however, observed any flushing of the face after moderate potations. Tobacco also has an unpleasant effect upon his nervous system, for which reason he seldom smokes. He has been subject from his earliest childhood to what he calls "blind boils," which were commonly about the size of a pea. Since the development of the anesthetic patches upon his body there has been no return of these until about two months ago, when groups appeared around the borders of the pallid areas. At the same time an eruption of small red papules occurred upon the face.

The patient is subject to frequent chills, more especially in cold and damp weather. He also complains of a throbbing sensation in the arms and upper part of the trunk. The pulsations, when present, manifest themselves at a regular rate. The man has a good appetite, but is troubled with indigestion, accompanied by flatulence. There is a tendency to constipation. He often has neuralgic pains over the right side of the face. These sometimes keep him awake at night, but at other times he sleeps well. His father is still living, aged fifty-two years. His mother lost her life by drowning twelve years ago. Neither parent suffered from any disease at all resembling his, nor is he aware of any similar case among his relatives. The patient denies ever having had any venereal affection. He has observed that under no circumstances do the anesthetic patches perspire.

The patient has seen cases of leprosy on his native island. He is very much depressed in spirits, has visited various medical institutions in the hope of relief, and has availed himself of every opportunity of reading books which he thinks bear on his case.

Upon examination there were seen upon the right leg large patches, the color of which was in marked contrast with that of the normal skin. The shade was about that to which the French give the name of *café au lait.* Above the knee the disease extends to the middle of the thigh. There is diminution or total loss of sensibility in the lesions. A needle can be thrust into the skin without causing pain. Nevertheless, hard pressure or a blow upon the diseased surface causes extreme pain, reaching, as he expresses it, "to the bone." On the inner surface of the right leg there are slight roughness and scaliness of the surface, and in this situation the skin is a little darker than in other parts affected. Upon the thigh the lesion has spread from the anterior to the internal surface and reaches within five inches of the groin. It has also crept around to the posterior surface. Upon the left limb the configuration of the patches is much the same. The buttocks, with the exception of the nates, are almost completely involved. The lesions upon the two sides are almost symmetrical. There are two distinct patches upon the back of the left thigh, one about 5 x 3 inches in size, and the other of roundish form and about the size of a fifty-cent piece. None of the affected spots or patches is notably raised above the general surface. There were no tubercles upon any part of the body. The lesions upon the hand, feet, and face have been described.

The knee-jerk is absent upon the right side. A drop of blood was taken from the finger and toe of the patient and spread on a cover-glass. Stained by Ziehl's carbol-fuchsin solution, the typical bacillus lepræ was found in moderate quantities. The deep-red coloration, appearance, and size of the organism left no doubt as to the diagnosis of leprosy.[1]

There can be no difficulty in deciding as to the nature of the disease with which this unfortunate young man is afflicted. The extremely slow yet inevitable progress of the lesions, the marked anesthesia by which they are accompanied, the loss of the toes, and the constitutional manifestations, together with the examination of the blood, point unerringly to leprosy. There are, in fact, few conditions with which the case could, by any possibility, be confounded. As far as a mere casual glance at the affected patches is concerned, the malady which it most nearly resembles is vitiligo or leukoderma. Vitiligo may occur at any age, and is more common among negroes and other dark races than among whites. The blotches may develop upon any portion of the body, vary much in size and shape, and are exceedingly chronic as regards growth and persistence. The normal pigment is more or less completely lost, leaving whitish, pinkish, or brownish patches scattered irregularly over the surface. To a certain extent the pigment may be said to be rearranged rather than lost, for although the lesions may be pale, they are usually surrounded by a well-defined margin, in which an excess of coloring-matter is present. In all other respects the affected skin in vitiligo is free from alteration. It is level with the adjacent integument, is not the seat of infiltration, and its glandular elements are intact and functionally active. Sensibility is normal. There is neither hyperesthesia nor anesthesia. There is no itching or other subjective symptom. There is no tendency in vitiligo to the occurrence of ulceration, the subcutaneous tissues are not involved, and there are no constitutional manifestations. It must be the result of faulty innervation, and this in turn may be a sequence of some acute or chronic disorder. Vitiligo in itself, however, gives rise to no systemic disturbance. The resemblance between vitiligo and lepra is superficial and should never mislead. The lesions of the former grow in size, but do not change in form. Those in the latter may begin as macules, or patches scarcely raised above the general level, but, by increased infiltration, may become converted into tubercles, or macules and tubercles may develop independently and co-exist.

Another disease in which patches characterized by alteration in the color and texture of the skin occur is morphea. In a certain form or stage of leprosy, therefore, when the lesions, as in the present case, are all of the macular variety, some degree of similitude may be found between the two diseases. Morphea may occur at any period of life. It may develop upon any part of the body. Its lesions are, in the beginning, usually hyperemic, so that they are of a pinkish or violet hue. Of a roundish, oval, or elongated outline, neighboring patches may coalesce and assume an irregular contour. The patches of morphea are generally surrounded by a well-marked pink or lilac ring composed of a network of capillaries. In an early stage of evolution the affected surface may be slightly elevated. In rare instances there may be a decided projection. As the case progresses the lesions become depressed and plane with the surrounding surface, or may even sink below the general level. At the same time the color fades and the patch assumes a dead-yellow tint. To the eye it appears smooth and shining; to the touch it is firm and inelastic. After remaining stationary for a long and indefinite period the lesion may disappear by a process of involution, or it may undergo atrophic alteration and become adherent to the subjacent tissues. Some desquamation may occur in old cases. Morphea runs a very chronic course. In the later stages of the affection the cutaneous glands participate in the atrophy, and their secretions are, consequently, lessened or suppressed. Furthermore, sensibility may be obtunded, but absolute anesthesia never occurs. Morphea is not often productive of marked subjective symptoms; but tenderness, pain, or tingling may precede or accompany the development of the lesions.

From the foregoing *résumé* it will be seen that in some of its features morphea bears a likeness to lepra. The slight, or in exceptional cases, decided elevation, the brawny feeling indicative of infiltration, the dulled sensibility and suppressed perspiration of morphea are similar to the local manifestations of lepra. In both affections the color of the lesion varies considerably in different cases and at different stages, ranging from pink to yellowish or white. As regards the cutaneous lesions, however, the ultimate progress of the two diseases differs. In lepra tubercles develop upon the base of or side by side with macules, deep, chronic, and intractable ulcers occur, spontaneous amputations of digits may take place, and mucous membranes may be attacked. Morphea is free from the destructive tendencies, the emaciation, and profound constitutional involvement of lepra.

A disease that presents some points of resemblance to morphea, and which, therefore, under some circumstances, might be confounded with lepra, is scleroderma. Scleroderma consists in an increase of the connective tissue of the skin and subcutaneous strata. Its characteristic lesion is an induration and rigidity of the skin, which becomes hard, dense, and cold, and has been aptly likened to that of a frozen corpse. The affected surface is slightly raised and is generally pale in color, though in some cases it is dark or pigmented. The contraction of the integument may cause deformities of the joints which it covers. Another peculiarity of the disease is that it gives rise to a slow absorption of the phalangeal bones without the extrusion of fragments. This absorptive process occurs only in those cases in which the primary lesions are seated upon the fingers. When scleroderma attacks the face it occasions a curious and characteristic rigidity and immobility of the features called by the French writers "the sclerodermic mask." This appearance is pathognomonic, and differs absolutely from the singular and hideous distortion of the face caused by leprosy. The sensibility may be diminished in scleroderma, but true anesthesia does not occur. The secretory functions of the diseased skin may be unimpaired, depressed, or stimulated. In advanced stages of scleroderma the skin may become atrophied, adherent to the bone, or ulcerated. The ulceration and deformities produced by scleroderma may suggest the thought of leprosy, but it should be remembered that in the former malady the digits do not fall in fragments as in leprosy. There is absorption *in situ*, but no spontaneous amputation.

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[1] Professor Ernest Laplace, of the Bacteriological Laboratory of the Medico-Chirurgical College, made an examination of the blood of this case. He recognized and clearly pointed out the lepra-bacilli in the carefully prepared specimen.

In the case that forms the subject of this paper no ulceration has yet occurred except in connection with the loss of the toes. It is to be observed that the wounds of amputation have failed to unite, and the ends of the stumps are uncovered with integument. I have for this reason compared it only with those diseases with which macular leprosy may possibly be confounded. A well-marked form of lepra is characterized by the formation of tubercles, and sooner or later ulcerations occur. According to the form and stage of the disease, therefore, it may become necessary to compare it with other affections, such as syphilis, lupus, and some forms of sarcoma —in other words, with maladies characterized by the presence of tumors and ulcers.

The reasons that warrant me in excluding vitiligo, morphea, and scleroderma have been given at sufficient length. In reference to the present case, it suffices to add that neither the history nor the course of the affection presents any analogy to syphilis. Syphilitic macules are small, and it is inconceivable that they would remain persistently upon the body for a period of seven years without change and without the occurrence of other well-known manifestations of the disease.

It is not necessary in this paper to trace the natural history of leprosy. Formerly much more universally prevalent than at present, the disease has been known from the most remote antiquity. We are familiar with its clinical features and course, but on certain points concerning etiology, contagiousness, and heredity there is not yet a unanimous concord of opinion. It is known to be of infectious nature, but it was only in 1880 that its exciting cause, a specific bacillus, was discovered by Dr. Armauer Hansen, of Bergen, Norway.

Leprosy occurs in three definitely marked forms, the tubercular, the anesthetic, and the macular, the present case being an example of the last-named variety. The pathology of the three forms is identical, consisting in the infiltration of new material composed of small, round cells. According to the amount of infiltration, the lesions present themselves as macules or tubercles. As a matter of fact, although an individual case may begin, like the present, with macular lesions only, tubercles also sooner or later develop, and the two types coexist. In anesthetic leprosy the disorders of sensation preponderate from the first, and the gross lesions may be very long in developing, and may consist of either form, or both may occur. It is understood, therefore, that the forms are almost invariably mixed. There are macules and tubercles, while anesthesia is present both in the lesions and in other situations. In all forms ulceration takes place.

That the progress of leprosy is extremely slow is demonstrated by the history of the case under discussion. It is now seven years since the first manifestation of disease, yet except for increase in size and number there has been but little alteration in the appearance of the lesions. There is nothing definite in this affection as regards the duration of its stages. There is a period of invasion, but the symptoms by which it is marked are of an indefinite character, and its length must vary within wide limits. In countries where lepra is prevalent the symptoms of the prodromal period are sufficiently familiar to excite suspicion, but their significance may easily be lost in lands where the affection is less intimately known. In the history before us prodromal manifestations seem to have been absent, for no mention is made of them by the patient. The first manifestation of which he speaks is the alteration in the color of the skin. Prior to the occurrence of visible lesions an individual may be afflicted with general malaise, the alimentary functions may be disturbed, there may be an unnatural inclination to sleep, apparently causeless attacks of fever at irregular intervals, or rheumatoid pains. A symptom upon which the Japanese lay great stress is a deep flushing of the face after partaking of even a small quantity of any liquor containing alcohol. I cannot ascertain that the present patient has ever been subject to this peculiarity. He is ignorant of any flush or lividity occurring in himself as a result of drink. Such a flush may be regarded as a very suggestive sign when it occurs. In some instances there have been noted during the premonitory period headache, bleeding at the nose, paresthesia, pain along the tract of certain nerves, enlargement of the lobe of the ear, atrophy of the ball of the thumb, etc. Cases have been reported in which many years had elapsed since any known exposure to infection before the first signs of lepra appeared. The average duration of the period of incubation is thought to be from three to five years. It is not unusual, however, for this stage to pass without any symptoms sufficiently severe to attract special attention or inspire solicitude.

An objective sign that often precedes the evolution of distinctive leprous lesions is the occurrence of large blisters or bullæ upon the skin. The eruption resembles that of pemphigus, with which it might readily be confounded. Upon close observation this prodromal eruption will be found to differ from pemphigus in certain particulars. In lepra the bullæ are much less abundant than in pemphigus, and their course is very tardy. The older lesions disappear before fresh ones come out to take their place. Previous to the outbreak of anesthetic leprosy these bullæ are perceived. They are few in number, and are quite large, some of them attaining the size of a walnut. The fluid that they contain may be clear or it may be of a yellowish hue. They do not remain long upon the surface before they spontaneously rupture. After they have broken a cicatrix is left. This process may go on for years before the characteristic lesions of lepra appear. These cicatrices become hyperesthetic, and other portions of skin, even those which to ocular inspection seem healthy, are the seat of increased sensibility. Eventually the hyperesthesia is succeeded by anesthesia.

It is uncertain whether, in the present case, the scars that exist plentifully upon the body are the consequences of bullæ. The man himself ascribes them to scratching for the relief of troublesome itching, but this can scarcely be the case. In the anesthetic form of the disease other perversions of sensibility, notably formication, occur, but itching is scarcely ever a prominent symptom. Certain nerves, especially those of the forearm, also become swollen and excessively painful to moderate pressure. This manifestation is absent. The scars are old; they do not resemble scratch-marks, and represent considerable loss of tissue. If his description may be credited, the "blind boils," to which he was long subject, were pustules; but it is probable that at any rate, for some time prior to the outbreak of leprosy, they were in reality bullæ, the contents of which were of a yellowish hue, which, to ordinary observation, might be mistaken for true pus.

The patient states that in his boyhood the eruption to which he was subject was attributed to the consumption of salt food. It has often been suggested that an improper and limited diet might be regarded as, at least, a predisposing cause of the disease. In particular, the use of fish, especially salted fish, has been thought to have a powerful influence in the production of leprosy. Mr. Jonathan Hutchinson has, on different occasions, given strenuous support to this theory. He has brought forward a large mass of observations concerning the distribution of lepra and the dietary habits of the countries in which it prevails. It must be conceded that the malady is frequent on islands and in countries which border upon the sea. The subject of this paper dwelt, until his eighteenth year, upon a small island. In such localities fish naturally enter largely into the general dietary. But leprosy is by no means confined to the seaboard and to fish-eaters. There are inland districts where the disease is not uncommon and where it attacks persons who are seldom able to procure fish. It occurs also among certain natives and castes of India who, from motives of taste, or from religious scruples, never consume this article of food. On the other hand, leprosy is not exceptionally frequent among the Parsees, although those people are much addicted to the consumption of fish. It seems that the theory, if admitted, would prove too much, for there are few regions in which either fresh-water or salt-water fish are not freely eaten. It has never yet been demonstrated that fish especially act as carriers of the bacillus lepræ.

Leprous patches vary considerably in color in different persons and at different stages in the same case. In some cases they are of a pale-red tinge; in others they are of some shade of brown; they may be almost black, while, again, they may present a white and shining aspect. In the case of this patient most of the lesions are of a light brown or chocolate hue, which is several shades lighter than the unaffected skin. In some situations, however, as upon the nose and hand, an erythematous patch has developed. That these reddish spots are lesions incident to the disease, and partake of its specific character, is shown by their chronicity and the perversions of sensibility by which they are accompanied. The spot upon the nose is swollen, and the organ has a flattened appearance toward its tip, which recalls the characteristic facial expression of the disease in its more advanced stages. It is related that this lesion supervened shortly after an accidental blow received upon the nose. Whether the slight injury had any share in determining a localization of the general disorder cannot be determined. But that traumatism may have such an influence in leprosy seems a tenable conception. The exact experiments of Schüller have demonstrated that traumatism plays an important part in the etiology of local tuberculosis, and it may sometime be found to promote the occurrence of a leprous lesion.

The affected surfaces in this case have not as yet undergone great alteration. Tubercles have not developed, and the visible mucous membranes are still intact. Patches of anesthesia and deposits of leprous material are frequently observed upon mucous membranes. The eyes are sooner or later attacked in a large proportion of cases. The occurrence of necrosis of the bones of the toes proves, however, that in this case the force of the disease has not been expended alone upon the skin. In the involvement of bone we have a phenomenon that usually belongs to a later stage of the disease, when tubercles have occasioned ulceration extending from the surface downward, and leading gradually by a natural process to spontaneous amputation of one or more digits. This event is known as lepra mutilans, or mutilating leprosy, and usually involves only fingers and toes, but the entire hand or foot has in some instances been sacrificed. As in this patient's case, skilled surgery was accessible, the speedy work of the knife has anticipated the slower methods of nature. It is to be noted that, although the operative wounds were small, primary union could not be obtained. The ulcerated stumps are, or will be, presumably leprous, as they show no disposition to heal, and there is complete anesthesia in the sole of the same foot.

The patient has lost weight and strength, but notwithstanding the long duration of his malady he has not notably emaciated. His nervous system is to some degree affected, as is shown by his disposition to chills, his depressed and peculiar mental condition, and anomalous symptoms ("pulsations") of which he complains. The facial neuralgia also points to perverted nutrition of the nervous system.

No history of heredity is obtained in this case. That the disease is infectious is rendered certain by the discovery of the bacillus lepræ; that it is contagious under favorable conditions is no less undeniable. Its hereditary transmission was long a matter of firm belief. Facts seemed to point to that conclusion. Yet of late years doubt has been thrown upon this question. None could deny that leprosy frequently afflicted different members of the same family, but it has been thought that the fact might be explained in a different manner. Contagion was held responsible for its spread from one to another member of the same family. This theory has been upheld more emphatically since the discovery of the bacillary origin of leprosy. It was contended that a child could only inherit a tendency or predisposition to the malady, but was never born leprous. An identical opinion has been held and taught as regards tuberculosis. It was supposed that the placenta offered an effectual bar against the transmission of micro-organisms. The inference followed that if the bacillus could not find its way into the blood of the fetus, the child could not be born a leper. The deduction, however, does not compel assent. In the first place, it may be objected that an abundance of clinical evidence demonstrates that a number of acute infections are transmitted from mother to child *in utero*. Whatever may be the mode of transmission, the result is a patent fact. When a babe is born covered with the marks of smallpox, scarlet-fever, or measles, no ingenious argument can explain away the fact. Similarly, children come into this world bearing the signs of syphilis which they have inherited. No one doubts the hereditary character of syphilis.

The same train of reasoning has been used to discredit the hereditary character of tuberculosis. A child cannot inherit a bacillus, it was claimed. Without a bacillus tuberculosis there can be no tuberculosis, but only a tendency to acquire that disease upon improper exposure. It is more in accord with advanced thought, nevertheless, to recognize the fact that even if bacilli themselves cannot penetrate the placenta, their soluble products, which are, after all, the actual agents of infection, may readily find their way into the fetal blood. Tuberculosis has been experimentally communicated to animals from a stillborn babe taken from a mother dead of that disease. A still more trenchant argument is found in the fact that the micro-organisms of typhoid fever, relapsing fever, and anthrax have been found in the blood of the newborn babe. In a disease characterized by such long periods of invasion and evolution, it is not surprising that leprosy should not, like syphilis, manifest itself in the newborn babe or young infant. As a rule, signs of the former disease do not occur until the fourth or fifth year of life, and may not be observed until several years later. It may be open to suppose that in such cases post-natal infection has taken place. A few well-attested cases of congenital leprosy are, however, on record. A passage from my treatise on diseases of the skin[1] may be inserted in this connection: "Dr. Navarro has described two cases of congenital leprosy. A woman gave birth to an ill-developed male child whose body was covered with leprous spots. In two months leprous tubercles developed upon the face, elbows, and knees. Signs of the disease soon afterward appeared in the mother and in a daughter eight years of age, who had until then been perfectly healthy. All died of leprosy within two years. Again, a woman in the last stage of the disease was delivered of a well-formed female child, upon whom were many leprous spots and a well-developed tubercle on the upper part of the concha of the left ear." Two authentic cases outweigh the greatest mass of negative and hypothetic argument. For the foregoing reasons it is rational to believe that the disease is transmitted by inheritance, as well as acquired by contagion. Adjudication of this problem is admittedly difficult, as, on the one hand, the children of lepers may remain free from the disease during life, and, on the other hand, it may be acquired by those in whose family it had never occurred.

Alterations of sensibility are marked and peculiar, and may exist at an early period of the malady. The varieties of sensibility are not always equally affected. In some cases, as in the present, touch is preserved, while susceptibility to pain is lost. In others, there is no perception of cold, but heat is felt, or there may be a complete loss of temperature-sense.

The knee-jerk in this case is absent upon the right side. In some cases it is unaltered, while in most cases of leprosy in which any change has been noted the patellar reflexes have been exaggerated upon both sides.

In the development of a case macules generally precede tubercles, although tubercular lesions may be present from the beginning. It may be predicted that the later manifestations will eventually be produced in this case, although they have been so long delayed. In late stages of leprosy the discolored elevations upon the face, hands, and other parts of the body form a typical picture which proclaims the diagnosis. The face is swollen and broadened. The expression is in some patients extremely pathetic, while in others the alterations of the features give a fierce and sullen aspect to the face. The leprous infiltration destroys the hair-follicles and the glands of the skin; the hairs fall and the nails are shed. Finally, the system at large is infected through the blood and lymph-channels, and deposits form in all the principal internal organs. The spinal cord and nerve-trunks undergo marked degenerations, the bacilli of the disease are widely distributed, and death from exhaustion or from some complication at length closes the scene.

THERAPEUTIC NOTES.

"HORSE-NETTLE" IN THE TREATMENT OF EPILEPSY.

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THE common "bull-nettle" or "horse-nettle" (*Solanum Carolinense, L.*) has been recently brought forward as an antispasmodic of value in convulsive affections, such as epilepsy, chorea, puerperal eclampsia, etc., and "especially in epilepsy. Many cases that have resisted all other remedies have been either cured or greatly benefited by this," we are told. The preparations thus far put on the market by several manufacturing houses are in the form of a "succus" or fluid extract of the fresh nettle-berries. Favorable reports of the action of the drug have already appeared in several of the medical periodicals.

During the past five months this new candidate for consideration has been given a trial in the treatment of epileptic insane patients in the wards of the Alabama Insane Hospital, the particular preparation employed being the "Fluid Extract of Horse-Nettle," of Parke, Davis & Co., of Detroit.

The results in eleven cases are appended. All of the patients have been under daily observation for some time, most of them for a term of years, and the general character of each case, as well as the reaction of the patients to many other antiepileptic agents, is fully known.

CASE I.—A female, white, fourteen years old, has had attacks of *grand mal* since her seventh year, numbering from one to five per month; aside from her epilepsy she is in very good bodily health, and shows but little mental impairment. The bromids, acetanilid, antipyrin, and β-naphthol have in the past seemed to exert a temporarily favorable influence. For six weeks she received no medicines whatever, had but two convulsions and was in good condition, mental and physical, during the time; she was then given rhei et sodii comp., 5 c.c., t. i. d., for three days, then β-naphthol, 0.3 grm., t. i. d., for seven days, and she still had no convulsions; she was then ordered fld. ext. of horse-nettle, 3 c.c., t. i. d. During the next seven days she had sixteen fits, all severe, and her mental state became worse, and she lost noticeably in weight. The horse-nettle was then discontinued; during the two succeeding days she had no convulsions; then in four days she had sixteen fits; after this in twenty-nine days she had six seizures, then ran nearly a month without an attack, having taken no medicine since the nettle was discontinued. The drug seems in this case to have exerted an injurious rather than a beneficial influence.

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[1] A Practical Treatise on Diseases of the Skin. New York, 1893.

CASE II.—A male, white, aged forty years, has been an epileptic since he was four years old. He is of unstable nervous organization, and for six years past—since his thirty-fourth year—has been regarded as insane. Mental deterioration is now well marked and slowly advancing. The fits are usually severe and mostly diurnal; on the average there will be about one-hundred convulsions a year. Most antiepileptic treatment is without effect, but chloral and the bromids measurably control the occurrence of the spasms.

He was three months without treatment; the first two months he had nine fits, the third month twenty. He was then placed on fld. ext. of horse-nettle, 2 c.c., t. i. d. During the succeeding two weeks he had four fits only; the dose was increased to 4 c.c., t. i. d., and during the next two weeks he had nine fits; the medicine was then stopped; during the next thirty days he had twenty-five convulsions. It will be noted that while the number of convulsions occurring during the period of administration of the nettle is less than the number during the preceding and succeeding period of equal length, the number of fits is not less than it was during a portion of the time when the patient was receiving no medicinal treatment.

CASE III.—A male, white, aged twenty-two years, has had convulsions since infancy, and is of a low order of intelligence. Attacks of *grand mal* occur at the rate of from five to eight per month.

For thirty days when he was without treatment he had seven convulsions. ℞. Fld. ext. of horse-nettle, 2 c.c., t. i. d.; after fifteen days the dose was increased to 4 c.c., and after two weeks the medicine was discontinued. During the thirty days the nettle was given, five fits occurred; during the thirty days following its discontinuance he had eighteen fits; after this the number sank to the usual, from five to eight per month.

CASE IV.—The patient was a female, white, thirty-nine years old, constituting a long-standing case of chronic epilepsy, with much impairment of intelligence and occasional periods of maniacal excitement. The attacks occur in groups of from five to ten at irregular intervals, are severe, and occur both by day and by night. In the course of a year she will have from fifty to sixty seizures.

She was thirty days without medicines and without a convulsion. ℞. Fld. ext. of horse-nettle, 2.5 c.c., t. i. d., continued twenty-four days, followed by no convulsions. So soon as the drug was withdrawn the fits commenced, and in fourteen days the patient had twenty-two severe seizures, grew very confused and imbecile; she gradually regained her former status, and for six weeks had no attack. Chloral has given good results in this case.

CASE V.—The patient was a white female, forty-eight years old, who had had epileptic seizures, *grand mal*, since her fifteenth year, with general mental enfeeblement. Convulsions rarely occur at night. She has from three to six fits per month. The number has been for a time materially diminished by acetanilid, borax, and the bromids.

She was twenty days under no treatment and free from convulsions: she was then given fld. ext. of horse-nettle, 3 c.c., t. i. d., for thirty days, having six spasms during this time; the drug was discontinued; in the following thirty days four spells occured. The nettle seemed entirely without effect of any kind.

CASE VI.—The patient was a white woman, thirty-eight years of age, who has had nocturnal attacks of *grand mal* since infancy; she is weak-minded, hysteric, and generally unstable. She will pass from one to three months without an attack; then for a month or more will have from one to fifteen seizures every night. No drugs—bromids, chloral, coal-tar derivatives, β-naphthol, borax, etc.—have been found of any value in this case.

In eighteen successive nights she had altogether eighty-seven fits; fld. ext. of horse-nettle was then given, first, 2.5 c.c., then 3.5 c.c. four times a day and continued two weeks; during this time she had eighty-two convulsions. After the drug was withdrawn the number of convulsions gradually diminished; they ceased entirely after five weeks, and then, as usual, she went on nearly two months without an attack.

CASE VII.—A woman, white, twenty-seven years old, has had attacks of both *grand* and *petit mal* since infancy. There is much mental impairment. During three months she had forty-two convulsions, most of them of brief duration, and some with only transient loss of consciousness. She was given fld. ext. of horse-nettle, 2.5 c.c., t. i. d., for twenty days, having during this time fourteen seizures; during the thirty days succeeding the withdrawal of the drug eight fits occurred. The nettle exerted no apparent influence. This case has been favorably affected by antipyrin and β-naphthol.

CASE VIII.—The patient was a female, white, aged twenty-six years, an epileptic imbecile. She has had during twelve months about one-hundred seizures.

In three months, during which she took no medicines, she had twenty-two fits. She was given fld. ext. of horse-nettle, 3.5 c.c., t. i. d. In the twenty-eight days the nettle was continued she had eighteen convulsions; the drug was then discontinued, and during the next thirty days she had sixteen spasms, and during the next thirty days nine only. If the nettle exerted any influence at all, it increased the number of the attacks. The bromids in this case have almost always reduced the number of convulsions.

CASE IX.—A man, white, thirty years old, had his first epileptic convulsion about eight years ago; since then attacks have occurred frequently, and are severe, *grand mal*, always; from fifteen to twenty per month is about their average number. His mental faculties have undergone rapid deterioration, and he is now very dull, sluggish, and feeble-minded. A great many different antispasmodics have been tried in this case without visible benefit.

For six weeks he took no medicines of any kind and had twenty-two fits during this time; he was then given fld. ext. of horse-nettle, 2 c.c., t. i. d., increased after two weeks to 4 c.c., t. i. d., which two weeks later was discontinued; during the first two weeks of treatment he had twelve seizures; during the next two weeks, taking twice the quantity of the drug, he had eleven attacks. After the medicine was discontinued the fits occurred at about their usual rate of from fifteen to twenty per month.

Case X.—A white imbecile female, thirty-six years old, has averaged from three to five fits per month since infancy. The convulsions have been temporarily reduced in number by borax, coal-tar derivatives, and the bromids.

She was two months without medicine and had five spells only, none occurring during the last twenty-six days of the time. She was then given fld. ext. of horse-nettle, 3 c.c., t. i. d., and in the fourteen days the drug was continued she had six convulsions—a greater number than during any period of equal length within more than three years. In the six weeks following the withdrawal of the nettle she had five attacks.

Case XI.—A female, white, aged forty-six years, an epileptic since infancy, is very weak-minded and dull. For some years past she has had from one to two convulsions in each thirty days, this period of time rarely passing without a seizure, except when antiepileptic drugs, bromids, acetanilid, β-naphthol, were given, when on one occasion nearly five months elapsed without a seizure.

For six weeks she was without treatment and had one convulsion; for fourteen days she took fld. ext. of horse-nettle, 2.5 c.c., t. i. d., with two convulsions; during the two months succeeding cessation of treatment she had three convulsions.

The results, it will be seen, are not encouraging. In cases V, VI, VII, and XI no visible effect was produced; in cases I, VIII, IX, and X there was an apparent *increase* in the number of convulsions during the time of treatment, and in three cases, II, III, and IV, while little or no effect was observed during the time of administration, there was a marked increase in the number of fits during several weeks following the stoppage of the medicine. The drug seemed well borne in every instance, and no complications or unfavorable symptoms (save the increase in the convulsions in the cases enumerated) were noted in any case. No one of the patients was in mental condition or in general bodily state benefited in the least. Of course, the class of patients under treatment exhibit epilepsy in its most unfavorable form; probably no case of chronic epilepsy with insanity can be cured or permanently benefited by any treatment with any drugs yet known; nevertheless many of these cases—most of them—are temporarily benefited—*i. e.*, the fits are reduced in number by not a few of the better known antiepileptic remedies. The usual rule is that the administration of any new remedy, often any change in treatment, is for a short time attended by a reduction in the number of convulsions; many drugs have in this way given us at first very gratifying results, only to prove, after longer experience, disappointing. Scarcely any line of treatment heretofore employed, however, has given such uniformly unfavorable results as has the use of the horse-nettle. It is possible that in the treatment of a less unfavorable class of patients the results might prove more encouraging.

The nettle belongs to the belladonna family, and probably possesses some of the virtues of its better known relative. Belladonna itself, however, has in the treatment of cases of epilepsy among the insane given results scarcely more favorable than those here reported.

A NOTE ON THE TREATMENT OF TONSILLITIS.

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In the management of any given case of tonsillitis of acute form it is important to make a diagnosis between several varieties which call for different methods of treatment. It is customary to distinguish the superficial, catarrhal inflammation of these glandular organs, in which the follicles are principally involved, from the parenchymatous, or peri-follicular, inflammation, which is always attended with more profound systemic disorder, and which very commonly terminates in suppuration. Another form has been described in which the tissues around the tonsil especially are the seat of inflammation, but this can scarcely be distinguished clinically from catarrhal pharyngitis, which usually accompanies it, and of which it is a more or less prominent part. It is also a well-established fact that quinsy is at times communicable, or at least affects several persons of a family in succession, so that a specific infectious variety of tonsillitis might be recognized if we had any means of distinguishing it clearly from the preceding, except by the entirely incidental evidence afforded by its concurrence in a certain group of cases. Moreover, there are a certain number of cases of inflammation of the tonsils in which the Klebs-Loeffler bacillus is a factor, either primarily or secondarily; thus we have a *diphtheric tonsillitis*, which, on account of its highly infective character and the danger of spreading diphtheria, imparts to the problem of diagnosis in cases of tonsillitis, a gravity that is becoming daily more highly realized by the profession and the public.

A convenient practical division of cases of acute tonsillitis for ordinary purposes might be made by retiring from consideration the follicular element, and grouping the patients clinically into (1) catarrhal or superficial; (2) parenchymatous or suppurative; and (3) infectious, the last named being cases either of (*a*) specific or of (*b*) diphtheric tonsillitis.

As regards the causation of the different forms, it may be said that the catarrhal form is generally traceable to some unusual exposure to severe cold, or to a change of underclothing, or to some local irritation; while, on the other hand, the parenchymatous form is generally an expression of the rheumatic poison, and may be accompanied by joint-inflammation or by endocarditis or pericarditis, and frequently also by albuminuria. With regard to the infectious varieties, it is to be borne in mind that an inflamed tonsil coated with follicular exudation and mucus affords a good culture-soil for bacilli of various kinds, and is favorably situated anatomically for infection by the air-current during respiration, so that a case, even when not originally infective, may become so, and enter upon a much more serious phase than it presented at its inception. The diagnosis is sometimes rendered obscure by cases of mixed type, in which parenchymatous inflammation is accompanied by more or less catarrhal involvement of the surrounding structures.

In the treatment of a case of the superficial form of tonsillitis it is only necessary to keep the throat clean and apply the customary remedies for a catarrhal attack, or so-called ordinary "cold." Irrigation of the throat with salt and water, or with the alkaline wash of sodium bicarbonate and biborate, potassium bicarbonate and potassium chlorid (a dram of the mixture to eight or ten ounces of hot water), frequently repeated, affords rapid relief. In addition to this, troches of sodium chlorate (grs. ij), introduced by Dr. Traill Green, of Easton, may be kept almost constantly in the mouth. These may be superseded by the potassium tablets, if there be a decided tendency to formation of suspicious membrane; but as the ordinary lozenges of potassium chlorate contain each five grains of the salt, care should be taken that the patient does not get a toxic quantity.

For general treatment, the patient takes a saline (one or two teaspoonfuls of effervescent sodium sulphate, or of some aperient salt), drinks hot lemonade, and adopts other means to increase the activity of the sweat-glands and kidneys. If the patient should be robust, and there is decided heat of skin, it is customary to resort to the use of tincture of aconite, one or two drops every hour for three or four hours, and then every two hours, or less frequently. In other words, the treatment is that of acute pharyngitis, including the wet compress or dry flannel to the neck. During the progress of the case the secretion pouring out from the mucous crypts may form a false membrane which tends to spread over the tonsil. If it can be easily wiped off with the point of a probe wrapped with absorbent cotton, and the surface of the tonsil looks as if the epithelium were intact, this feature is usually relied upon to distinguish it from a diphtheric case, in which the surface of the tonsil looks raw and bleeds after removal of the membrane. In point of fact, however, this test cannot be fully relied upon to differentiate the infectious from the non-infectious cases, and even the most experienced may occasionally find himself mistaken unless cultures are made, with bacteriologic and microscopic examinations, to determine the exact character of the micro-organisms present.

The second group is interesting, owing to its sometimes uncontrollable tendency to suppuration, and also to its acknowledged pathologic relationship to rheumatism. These cases very often have a distinct chill at the onset, followed by soreness of the muscles of the back and legs, with decided fever and prostration. The tonsils are less red in color, and usually the inflammation is restricted to only one, which is a deep-red or purple, and the follicles are comparatively unaffected. There is more constant pain than in the preceding form, and it is of a dull, throbbing character; the glands of the neck may also be enlarged and painful. The case may likewise be traced to exposure to dampness and cold, but there is also present a dyscrasic element that is well marked and harmonizes with the view already expressed as to its pathology.

The local treatment of acute parenchymatous tonsillitis is of less consequence than in the first form. When the parts are tense, scarification affords considerable relief by reducing the hyperemia. The crypts may also be explored with a probe so as to permit retained secretions to escape. Small pieces of ice may be held in the mouth and allowed to melt slowly. Gargling is usually too painful to be resorted to, but very hot water containing a little alkali (Seiler's tablets) may be held in the back part of the mouth, every half or quarter of an hour, with decided effect upon the congestion. A mercurial purge of ten or twelve grains of blue mass, or of half a grain of calomel and soda, repeated every hour until the bowels are moved, either being followed by a saline, will sometimes succeed in causing an attack to abort without going on to abscess. When there is much muscular soreness, or the case takes on a decided rheumatic appearance, salophen may be given in doses of five or ten grains every hour or two, and is followed by almost immediate benefit. It has been established by abundant clinical evidence that no drug can equal salicylic acid in controlling the manifestations of acute rheumatism, and for this purpose the pure vegetable salicylic acid is preferred. In salophen we have an agent that in the intestinal tract breaks up into salicylic acid and a non-toxic phenol-derivative. In the nascent condition the salicylic acid is decidedly more active than in its usual form. As the salophen yields only fifty per cent. of salicylic acid, it might be considered that the equivalent dose would be twice as great; but in fact it is only the same as that of salicylic acid (from forty to sixty grains daily). It has not the objections which inhere to the acid, and is said to be non-toxic. It is also tasteless and odorless, and easily administered. Being feebly soluble, it is best given in powder, pill, or tablet. If there is much pain, five grains of phenacetin may be added to each dose with decided advantage. An antirheumatic remedy that has been used largely in tonsillitis, and is highly indorsed by Prof. J. Solis-Cohen, is guaiac. The ammoniated tincture may be given (a dram in half a glass of hot milk) every two or three hours, and often with much benefit, or the Mackenzie guaiac lozenge may be used. In Prof. Cohen's clinic at Jefferson Medical College a hot-water gargle medicated with the ammoniated tincture (half a dram to a cupful of water) is generally resorted to. Fastidious patients, however, would prefer the more agreeable antiseptic wash of menthol, boric acid, and soda. Painting the tonsil with a ten per cent. solution of silver nitrate is sometimes of service, but the chief reliance should be placed upon constitutional treatment.

Any decided tendency to the formation of an abscess may be encouraged by the inhalation of steam, which may be medicated by the addition of compound tincture of benzoin and paregoric, equal parts; but the chief benefit is from the local action of heat and moisture. As soon as fluctuation, or pointing, of an abscess is found, the collection should be evacuated, preferably from the lowest portion of the tonsil, so as to favor drainage. The incision need not be painful; but, if desired, cocain may be used, or ice may be held in the mouth for a few minutes previously. The after-treatment calls for no especial comment. By proper attention to clothing, diet, and personal habits in the interval between attacks a great deal can be done toward obviating the tendency to recurrence in these cases. It is at least noteworthy that Prof. Dudley S. Reynolds some years ago pointed out a strong tendency to the occurrence of repeated attacks of tonsillitis in persons who indulge freely in sweetmeats and especially glucose, and more recently it has been announced, and the view is now very generally held, that a diet rich in sugars and starches particularly favors the development of acute rheumatism.

With regard to the false membrane that so commonly occurs in tonsillitis, especially in certain families, it can only be regarded as an extremely undesirable complication, and it should be the object of treatment to prevent its spread and remove it entirely at the earliest moment by the use of hydrogen dioxid, alkaline applications, or digestive agents, having always before the mind the possibility of infection. A case with abundant false membrane may turn out to be only catarrhal, while a comparatively innocent-looking case may communicate diphtheria of virulent type.

MEDICAL PROGRESS.

On a Modification of Golgi's Methods of Staining Nervous Tissue.—At the last meeting of the British Association for the Advancement of Science Oliver S. Strong described Golgi's methods of nerve-staining. These may be divided into two principal heads: 1. The sublimate method, consisting essentially of hardening in potassium bichromate, followed by immersion in mercuric chlorid. 2. The silver methods: (*a*) the long, or slow method, consisting in hardening for about twenty or thirty days in potassium bichromate, followed by immersion in a solution of silver nitrate. (*b*) The rapid method, in which the hardening is effected in a mixture of potassium bichromate and osmic acid. This is the method, slightly modified, which is so extensively used by Ramon y Cajal. (*c*) What may be designated as the mixed method, or combined method, and consists in hardening first for a few days, or a week or so, in potassium bichromate, then for a day or two in the osmium-bichromate mixture, and finally immersion in the silver-bath.

The rapid method is the best yet discovered for work on the peripheral terminations of nerves and for the embryonic central nervous system. It is not so well adapted for adult brains, owing to the poor penetration of the osmic acid and consequent liability to overharden the periphery, while the central portions of even small pieces remain untouched. Moreover, adult brains are not well adapted for the study of the nervous or axis-cylinder prolongations of the cells, owing probably to their sheath, so that with such material study by these methods would be chiefly directed to the cell-bodies and their protoplasmic expansions. For such purposes the long Golgi method is eminently adapted.

While the long Golgi method avoids the disadvantages, including the expense—no small consideration when large quantities are used—of osmic acid, it has the disadvantage of requiring about a month, besides the uncertainty common to all these methods. In order to reduce this period of time, and yet avoid the use of osmic acid, the new method proposed for the study of adult brains is the use of lithium bichromate instead of potassium bichromate, with the same percentages. Small pieces of tissue placed in the former reach the favorable stage of hardening for the silver-impregnation in the course of one or two days, instead of from twenty to thirty days. They pass through this favorable period quite rapidly, but the whole process is reduced to such a short time that it is rendered much less tedious. The pictures yielded by this process appear fully equal to those prepared by the other methods.

The subsequent treatment is as in the other methods —*i. e.*, the piece of tissue is rinsed in strong alcohol, cut free-hand, or gummed on a block without any imbedding, and cut with a microtome. The sections are washed in several changes of strong alcohol, cleared in oleum origanum cretici, washed briefly in xylol, and mounted in dammar or Canada balsam, thinned with xylol, without a cover-slip.

It would be interesting to ascertain how well adapted this new hardening reagent is for preparing the central nervous system for other methods of staining—*e. g.*, the Weigert method.

General Paralysis of the Insane in a Child.—Thompson and Dawson (*Lancet*, No. 3729, p. 397) have reported a case of general paralysis of the insane in a girl, setting in at the age of ten years and eight months, running a course similar to that most commonly observed in women, and ending in death after a steady breakdown of the bodily and mental powers during a period of two years and four-and-a-half months.

Post-mortem examination disclosed the existence of typical lesions. The outer and inner tables of the calvarium were thickened, and the dura mater was thickened and adherent in places, especially along the superior longitudinal sinus, while in other places it was separated from the bone by false membrane. The cerebral aspect of the dura likewise was lined with false membrane of varying thickness, and which was loosely adherent to the arachnoid. There was an excess of sub-arachnoid fluid, and the pia was universally adherent to the cortex. There was an abnormal attachment between the anterior lobes of the brain, just in front of the genu of the corpus callosum. There was marked superficial atrophy of the brain, most pronounced in the frontal and parietal regions. On section, the cortex was atrophied and toughened. The white matter was pinkish in color, and though of soft consistence was also tough. The ganglia were soft and friable. The ventricles were dilated and contained turbid fluid, whilst the ependyma was thickened and tougher than normal. Granulations were found in the pia, especially along the vessels and also on the floors of the lateral ventricles and of the fourth ventricle as well. The soft commissure of the third ventricle was exceedingly tough. The cerebellum presented much the same conditions as the cerebrum. Microscopic examination of the brain and cord confirmed the existence of degenerative changes.

Association of Respiratory Paralysis with Cardio-pulmonary Symptoms in Diphtheric Paralysis.—At a recent meeting of the Medical Society of London, Pasteur (*British Medical Journal*, No. 1779, p. 251) reported the results of an analysis of thirty-two cases of diphtheria, of which nineteen terminated fatally, and seventeen of these presented bulbar crises. In five cases in which the diaphragm had been paralyzed for two or more days there was an extreme degree of collapse of the lungs after death, especially of the right base, which in two cases sank entirely in water. In other cases in which the paralysis had been of short duration or was entirely absent there was little or no pulmonary collapse. The extent and degree of collapse appeared to be directly proportionate to the duration and degree of the paralysis. The following conclusions were announced: The mortality in diphtheric multiple paralysis is probably higher than current opinion would lead one to suppose. Death takes place by asphyxia. The fatal symptoms are in the large majority of cases of sudden onset, and suggest a bulbar origin. Recovery from a bulbar crisis is exceptional. Paralysis of the diaphragm is comparatively frequent, and may occur either acutely, as part of the bulbar crisis, or may develop immediately as part of a peripheral paralysis. The supervention of respiratory paralysis very seriously increases the gravity of the prognosis. Whenever paralysis of the diaphragm, or other part of the chest-wall, is long continued (two or more days), collapse of the adjacent lung is very liable to occur, and may give rise to definite physical signs. The base of the right lung is more liable to be affected in this way than the left.

Traumatic Glycosuria.—As a result of personal observation in conjunction with an analysis of the literature of the subject, Higgins and Ogden (*Boston Medical and Surgical Journal*, vol. cxxxii, No. 9, p. 197) conclude that after injury to the head sugar may appear in the urine as early as six hours and disappear within twenty-four; the average time for its appearance, however, being from eight to twelve hours, for its disappearance, from the fifth to the ninth day. A small proportion of the cases may exhibit glycosuria from the date of injury. Acetone and diacetic acid are rarely, if ever, found in such cases, excepting when the glycosuria becomes permanent, and even then probably not after a number of months or years. Of twenty cases of glycosuria recorded in the paper, eleven (55 per cent.) had received an injury to the right side of the head, five (25 per cent.) to the left side; three (15 per cent.) of the occiput, and two (10 per cent.) failed to present external evidence of violence. It is believed to be impossible in the present state of the knowledge of the pathology of diabetes and glycosuria to draw any inferences from the autopsies that have been made. Of the twenty cases reported, eight died, six from direct results of injuries, one from intercurrent disease, and the remaining one probably from alcoholism. In a collection of 212 cases, 16 were fatal, and 50 per cent. of these presented glycosuria.

A New Mode of Treating Placenta Prævia Centralis.—Nijhoff (*Centralblatt für Gynäkologie*, 1895, No. 8, p. 210) has reported the case of a woman in whom, in the course of her third pregnancy, the existence of placenta prævia was suspected from the occurrence of hemorrhage and a relaxed and flabby condition of the lower uterine segment and the vaginal portion. At the conclusion of pregnancy, and with the recurrence of hemorrhage, the os being insufficiently dilated and the pains feeble, the vagina was tamponned with iodoform-gauze. The bleeding, however, persisted, and it was concluded to penetrate the presenting placenta with the finger, to practise version, bringing down a foot, and then to proceed slowly or to wait, according to circumstances. The placenta was readily torn through, and the amnion detached itself and followed through the artificial opening made. It was now concluded to permit the labor to proceed spontaneously. The vagina was again tamponned, and pains soon returned and became vigorous. Finally, sufficient dilatation had taken place, and the fetus followed the membranes through the rupture made in the placenta. The placenta was expelled in the course of a half-hour without extraordinary hemorrhage, and there were no further complications. The child was well developed and robust.

THERAPEUTIC NOTES.

The Treatment of Diphtheria with the Antitoxin.—At a recent meeting of the Société Médicale des Hôpitaux Sevestre and Meslay (*Le Mercredi Médical*, 1895, No. 10, p. 114) reported the employment of the antitoxin in the treatment of one-hundred-and-fifty cases of diphtheria examined bacteriologically and presenting diphtheria-bacilli, with fifteen deaths (10 per cent.). Excluding cases in which death took place within twenty-four hours of admission to the hospital, the percentage of deaths was reduced to 6.6 per cent.

Withington (*Boston Medical and Surgical Journal*, vol. cxxxii, No. 11, p. 249) reports eighty cases of diphtheria treated with the antitoxin during December, 1894, and January, 1895, with thirteen deaths (16 per cent.). Eleven additional cases presented the clinical picture of diphtheria, but were excluded from the statistics, because of failure to find diphtheria-bacilli. In addition to the specific treatment, frequent feeding was resorted to, and alcohol, iron, and cardiac stimulants administered as required. Locally, irrigation was practised with a normal salt-solution or diluted Dobell's solution whenever it could be done without provoking great resistance on the part of the patient. During the same period forty cases of diphtheria presenting diphtheria-bacilli were treated without the antitoxin for various reasons, such as lack of serum, lateness in the disease, a moribund condition of the patient, a negative report upon first examination as to the presence of diphtheria-bacilli, and mildness of the disease. Among this number there were twelve deaths (30 per cent.). This group was believed to represent rather less than the average gravity, while the first group represented rather more than the average severity.

Risel (*Deutsche medicinische Wochenschrift*, 1895, No. 10, p. 165) reports the employment of the antitoxin between November 11, 1894, and January 15, 1895, both in private and in hospital practice, in one-hundred-and-fourteen cases of diphtheria at the hands of thirty different physicians, with nine deaths (7.89 per cent.). Bacteriologic examination was made in but a small number of the cases.

For the Prevention of Tuberculosis Sir Benjamin Ward Richardson (*Asclepiad*, second quarter, 1894-'95, p. 147) gives the following sanitary decalogue: First, pure air for breathing. Second, active exercise, outdoor as much as possible. Third, uniformity of climate. Fourth, dress that will sustain uniformity of warmth. Fifth, careful regulation of the hours of rest by the sunlight. Sixth, outdoor occupation. Seventh, amusements that favor muscular development and sustain healthy respiration. Eighth, cleanliness in the broadest sense. Ninth, the avoidance of the ill-effects of cold. Tenth, an ample diet, with a full proportion of the respiratory foods.

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TUBERCULOSIS IN HOSPITALS FOR THE INSANE.

Nearly a year ago it was found, after diagnostic tests with tuberculin, that tuberculosis existed among a herd of Holstein cows at the State Asylum for the Insane at Norristown that had been purchased a year or more previously, and from which a portion of both the milk-supply and the food-supply of the institution was derived. As the investigation proceeded it developed that a large number of animals were infected, and these were accordingly destroyed. The number thus disposed of has reached the neighborhood of 200. The slaughtered animals were buried in a grove some distance back of the hospital, being covered with quicklime and three or four feet of earth. In some of the cases the diagnosis was based upon the symptoms and physical signs; tuberculin was employed only in those cases in which these means failed.

Appreciating the importance of the event, and with a view to reach some practical deductions as a result of so expensive and so dangerous, withal involuntary, an experiment, The Medical News endeavored last summer to obtain such information from authoritative sources as would best subserve these purposes, but without success. One proffer of aid was soon withdrawn, and there appeared a lack of readiness and frankness in giving information that dissipated all hope of a thorough investigation. Application to a member of the Board of Trustees for information was met with the statement that the matter was in the hands of the official pathologists, from whom a full report was soon expected, and which would be placed without delay in the hands of the medical journals. This report has not yet been received, although the promise of early publication is still held out.

Realizing that little information or aid could be obtained voluntarily from those who were in the best position to give it, The Medical News appointed a special commissioner to make an inquiry as to the influence, if any, exercised by the use of the milk and flesh of tuberculous cows upon the morbidity and mortality among the patients at the Norristown Hospital. Inadequate as are the data and inconclusive as are the results, we feel that they should not be lost, and hope that they may soon be supplemented by the long-waited-for official report.

Our commissioner made a comparative study of the mortality from tuberculosis for a period of ten years, not only at the Hospital for the Insane at Norristown, but at the Harrisburg, the Danville, the Western Pennsylvania, the Philadelphia, and the Pennsylvania Hospitals for the Insane, and has prepared two tables, showing (1) the percentage of deaths from tuberculosis among the total population in these institutions, and (2) the percentage of deaths from tuberculosis among the whole number of deaths from all causes.

One cannot but be struck by the high mortality from tuberculosis, both relatively and absolutely, shown by these figures; nor can it be said that the position of the Norristown Hospital is one to be proud of, standing in the one table fourth and in the other fifth among six in the average mortality from tuberculosis for a period of ten years, being surpassed only by the Western Pennsylvania and the Philadelphia Hospitals. The figures of the Pennsylvania Hospital, on the other hand, are worthy of careful study and successful emulation. Beautifully situated in the open country, remote from the crowded city, with ample grounds, the conditions at Norristown should be favorable to the lowest morbidity and mortality as regards tuberculosis, as well as other diseases, rather than the highest figures. We do not forget that the mental and physical condition of the patients at Norristown,

Table I.—Showing Percentage of Deaths from Tuberculosis among Total Population.

	Norris-town.	Harris-burg.	Danville.	Western Penn'a.	Philad'a Hospital.	Penn'a Hospital.
1884	1362:1.3	526:0.5	528:0 5	687:1.3	880:2 5	546:0.1
1885	1730:2.1	564:0.8	859:1.2	719:2.2	889:0.8	505:0.3
1886	1847:1.5	575:1.7	996:1.0	742:1.2	435:0.6	536:0.0
1887	1964:0.9	611:1.8	1054:0.4	795:2.1	609:0.4	570:0.5
1888	2229:2.1	769:0.7	1055:0.8	843:3.2	893:0.8	520.0.5
1889	2143:1.2	875:1.1	1093:0.4	906:1.8	1052:1.3	524:0.5
1890	2307:1.9	922:1.5	1140:0.8	960:2.5	919:3.6	565:0.7
1891	2362:1.9	1009:1.2	1251:0.8	1005:5.0	932:3.9	585:0.1
1892	2382:2.0	1029:1.4	1324:1.0	989:4.1	1012:5.2	598:0.5
1893	2381:2.8	1008:2.1	1248:0.9	996:2.5	1066:6.0	599:0.0
1894	2450:3.2					
Gen. av.	1.9	1.3	0.8	2.7	2.8	0.3

Table II.—Percentage of Deaths from Tuberculosis among the whole number of Deaths from all causes.

	Norris-town.	Harris burg.	Dan-ville.	West'n Penn'a.	Phila. Hosp.	Penn'a Hosp.
1884	18.7	8.3	10.4	13.0	25.2	3.0
1885	30.4	11.1	26.8	27.0	14 2	6.0
1886	22.0	20.0	20.4	20.9	10.0	0.0
1887	11.6	25.0	9.6	22.0	7.5	9.6
1888	25.3	11.5	15.7	27.6	14.8	7.1
1889	25.9	16.9	6.1	28.8	12.3	13.0
1890	22.6	20.0	12.8	33.8	33.9	11.7
1891	23.5	15.8	14.4	42.5	36.2	2.8
1892	24.0	18.2	20.2	35.0	27.0	8.3
1893	33.0	32.3	17.1	25.0	30.2	0.0
1894	36.9					
Gen. average	25.4	18.5	14.9	29.0	24.9	6.1

with the resultant, and sometimes necessary, mode of life, predisposes to the development of tuberculosis; but we have thus far considered only relative values. We are, however, willing to go a step further and maintain that if the insane were surrounded by the same hygienic conditions as the sane, the disease and its fatality would be scarcely greater in the one class than in the other. What all tuberculous patients and those predisposed to tuberculosis most need is an abundance of fresh air, sunshine, and plenty of nutritious and easily assimilable food. Sick and well should also, so far as possible, be kept apart, and the ordinary rules of hygiene observed, with special attention to cleanliness and care of the discharges. We cannot agree with the statement made in the Annual Report of the Norristown Hospital for 1894, that there is "a close relation between consumption in the parent and insanity in the offspring." Were this true, insanity should be even more common than tuberculosis.

The following additional information was obtained by our commissioner:

"Careful physical examination of each female patient is made on admission, and if tuberculosis is present the fact is noted.

"Staining of the sputum for tubercle-bacilli is practised for diagnostic purposes when tuberculosis is suspected.

"The number of patients showing signs of tuberculosis on admission is very small. Of the twenty-one women at present having signs of tuberculosis, not more than one was considered tuberculous on admission.

"The diagnosis of tuberculosis is a rather difficult matter in an insane subject; a case may progress to a considerable extent without any cough, owing to the lowered nervous tone; many patients, when physical examinations are made, will refuse to breathe, and some become violent when anyone approaches them, so that in such cases physical examinations would be useless. The diagnosis is sometimes made from signs of hectic, evening fever, and sweats.

"The tuberculous patients are not segregated. This has been considered, but one obstacle in the way is that it might necessitate placing one patient who is sane almost all the time with one who is chronically insane and of filthy habits.

"Post-mortem examination sometimes reveals well-advanced lesions of tuberculosis when none had been suspected, for reasons already mentioned. [Probably if a necropsy were held in every case dying in the hospital the number of deaths due to tuberculosis would be found to be still larger.]

"About six female patients were sent home to die during last year at the request of relatives.

"The beef used for the inmates is carefully inspected.

"The milk is obtained from Montgomery County farmers, and is boiled before being used.

"Probably not more than six of the male patients are tuberculous. There is no record from which exact figures can be learned. Careful examination of each patient is made on admission, or as soon thereafter as the patient will allow it."

There appears to be some disparity between the statement that at present not more than six of the male patients have tuberculosis, and the fact brought out in the annual report for 1894, that of a total of 122 deaths in the department for males, 31 (23.41 per cent.) resulted from "phthisis pulmonalis" and 3 from general tuberculosis. Of the total of 92 deaths in the department of females, 45 (48.9 per cent.) were attributed to tuberculosis.

Where further shall we look for an explanation of the fact that with practically the same daily average number in the wards for both males (965) and females (970), and an approximately equal number of cases throughout the year (1262 male, 1223 female), there was a so much larger number of deaths from tuberculosis, both relatively and absolutely, among the females? On the other hand, the much larger number of deaths from all causes among the males (122 in 1262—9.67 per cent.), as compared with the females (92 in 1223—7.52 per cent.) is, to say the least, startling.

We have now gone as far as the facts admitted will permit us. We have seen that a large proportion (a very large proportion, even larger than in other similar institutions in the State) of the deaths at the State Hospital for the Insane at Norristown are attributable to tuberculosis; and if modern investigation has taught anything, it has demonstrated that tuberculosis is both a preventable and a curable disease. Now how can we explain its great prevalence at Norristown? Is it due to defect in quality or insufficiency in quantity of the food, or to errors of hygiene? To one or several of these it must be due. We have not the information upon which to base an opinion. It would scarcely be justifiable to attribute it to a peculiarity of the patients, for these probably differ little from those admitted to other and similar institutions. The problem should not be a difficult one for the authorities to solve. If they will look for the cause, it cannot escape them. The cause once found, the remedy will suggest itself.

SUDDEN DEATH IN THE COURSE OF TYPHOID FEVER.

THERE is yet a good deal to learn concerning typhoid fever, in spite of the fact that the disease is one of the commonest and most widespread and its symptomatology so well known. There remains much to be cleared up in the pathology of the disease, and for this elucidation we must await the further development of what may conveniently be designated biologic chemistry.

The only prophylactic measures at our command are of a general rather than a special nature; nor can it strictly be said that we are in possession of a specific means of treatment. As the infection is conveyed largely by water, and gains entrance through the gastro-intestinal tract, many cases—no doubt the vast majority—would be prevented if all water and milk intended for consumption were first thoroughly boiled. In the line of treatment the best means at our command is the Brand bath; but this cannot be considered specific, and it must be admitted that its universal application is attended with difficulties at times of insurmountable character, while certain complications contraindicate its use in some cases.

In the light of recent developments we feel that it is reasonable to hope that in the not very remote future the laboratory will provide us with a biologic remedy for the treatment of typhoid fever comparable in its specificity with the use of quinin in malaria, of mercury in syphilis, and, we feel justified in adding, of the respective antitoxins in diphtheria, cholera, and tetanus. This hope seems the more justifiable inasmuch as typhoid fever is a self-limited disease, and it may be safely assumed that its termination is brought about by the development of conditions unfavorable to the existence of the typhoid bacilli and of substances that exert an antidotal action upon their toxic products.

It must be remembered that in none of the conditions named is the specific to be viewed as an infallible remedy. We may assume that it acts either as an antagonist to the primary cause of the disease (animal or vegetable organisms) or as an antidote to the poisons secondarily generated (toxalbumins). The result in any given case must depend upon the reaction between the various operative influences. The specific cannot be expected to influence developed complications, intercurrent affections, secondary infections, and sequelæ.

In what degree complications and sequelæ may be averted or modified by such specific treatment as is here spoken of, even though the original disease be not perfectly aborted, only future study can determine. In some of the infectious diseases these complications are but manifestations of the general infection, in others they represent the effects of intoxication with the products of the causative agency, and in still others they result from secondary infection or from derangement of physiologic or mechanical processes in parts adjacent to the seat of disease.

Of the infectious diseases there is none, perhaps, whose course is so treacherous and whose outcome is so uncertain as typhoid fever. This is partly so because the principal lesions are beyond the range of satisfactory physical examination, and partly because the general symptoms are not a safe index of the pathologic process. It thus happens that the first intimation of intestinal hemorrhage may be a sudden decline in temperature, with or without general pallor and other symptoms of loss of blood. The first confirmation of the event may be brought by the tarry stools that follow, and even these may be wanting if constipation exists and the extravasated blood is retained in the bowel.

A further danger in the course of typhoid fever, as it must be recognized to be in the course of any of the infectious diseases, is the occurrence of sudden death. This may happen in the absence of evidence of disease of the heart involving its muscular structure, its serous layers, or its valvular apparatus. Various causes have been assigned for the event; among them may be mentioned a reflex influence upon the bulb through the intestine, cerebral anemia, cardiac thrombosis, pulmonary embolism, anemia, typhoid intoxication, inflammation of the pneumogastric nerves, obliterative endarteritis, and myocarditis.

A case belonging in the last category has recently been reported by HOBBS (*Archives Cliniques de Bordeaux*, 1895, No. 1, p. 35), who relates the case of a man, nineteen years old, in which sudden death took place on the eighteenth day of an attack of typhoid fever presenting symptoms of ordinary severity. Upon post-mortem examination, in addition to intestinal ulceration and enlargement of the spleen, the heart was found relaxed and flabby and of pale color. Microscopic examination of the myocardium disclosed a condition of acute inflammation characterized by a peculiar fragmentation of the muscular fibers. This mode of termination of typhoid fever is, as one would naturally expect, uncommon early in the attack. Its frequency increases with the progress of the disease, to become greatest during the period of defervescence and beginning convalescence. Among 146 cases collated by DEWÈVRE[1] sudden death occurred in the first week in 2; in the second week in 22; in the third week in 54; in the fourth week in 37; and in the fifth week in 31. There is no single remedy or combination of remedies that can be recommended to avert such an unfortunate accident. Its prevention, in so far as this lies in the power of man, is included in the general management of the case, having in view the natural history of the disease and its attendant complications, and will require the finest judgment and fullest resource.

EDITORIAL COMMENTS.

Suggestions to Hospital-visitors.—In a little brochure just issued by the J. B. Lippincott Company Dr. John S. Billings, in his capacity as Director of the Hospital of the University of Pennsylvania, and Dr. Henry M. Hurd, the efficient Superintendent of the Johns Hopkins Hospital, tell in a charming manner the ways and means by which hospital-visitors may best meet the obligations they voluntarily assume in accepting their positions. As Dr. Weir Mitchell in his brief and effective introduction puts it, the little book is to be commended to "all who, being managers, trustees, or in any way connected with hospital-work, are not contented to assume an official name and remain ignorant of how honestly to fulfil the duties which should go with it." It "is meant to assist untrained observers, yet even the most expert manager of a hospital or the ablest medical observer ought to find in it valuable hints."

It is well pointed out that in the performance of his duties the visitor should be moved by a spirit of friendliness for the hospital and its direction and not by a desire merely to criticise from preconceived notions. He must have eyes that see and ears that hear, together with a mind capable of weighing evidence, of reaching just conclusions and suggesting appropriate remedies; yet he must never forget that he sees but one phase of the picture, or at least that he may not be a competent judge in many instances. To his task he must bring the most delicate tact in conjunction with rare discrimination.

The visitor must, first of all, become acquainted with those to whom is intrusted the duty of administering the affairs of the hospital, and with their aid familiarize himself with the details of management, in order that he may be of help in the work of execution and improvement. It must not be forgotten that while the primary and the main object of a hospital is the relief of suffering and the cure of disease in the individual, a secondary but yet important one is the enlargement of the general fund of knowledge of disease and the improvement of methods of treatment.

The most cordial and respectful relations should be encouraged among the various divisions of the administrative and executive arm of the hospital, and those who come under their care should receive due consideration and their needs proper attention. Especial study may advantageously be devoted by the hospital-visitor to the building, its general ventilation, temperature, light, cleanliness; the ward, its hygiene, care, and discipline; the patients, their food, dress, and treatment; protection against and provision in case of fire; the management of the kitchen; the quantity and quality of the food, its mode of preservation; inspection of laundry, pharmacy, operating-room, mortuary, etc. In hospitals for the insane the duties of the inspector are, for obvious reasons, even more important than in general hospitals. Especial attention should be directed to the attendants and their conduct, the food, the clothing, the occupations and amusements of the patients, the precautions against fire, the means of restraint, bathing, the care of the sick, night-service, and the matter of admissions and discharges.

Intelligently performed the work of a hospital-visitor may yield the happiest results and be productive of boundless good; but governed by a spirit of faultfinding and captious criticism it may be the source of much discord and friction and interfere greatly with the full usefulness of a noble object.

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[1] Archives générales de Médecine, October, December, 1887.

The little book, upon which we have freely drawn in the foregoing remarks, will prove a useful aid in effecting a good end, and the thanks of the profession and of the community are due to those who have suggested its preparation and those who have so efficiently dealt with the suggestion.

The Prevention of Blindness.—The relation between neonatorum conjunctivitis and the large amount of blindness in the world is so well established as to require no comment here.

There may be some question whether or not the infection can in all instances, as matters go, be prevented; but there is no difference of opinion that, with prompt and appropriate treatment, the inflammation can in almost all instances be controlled and its disastrous consequences averted. Any measures having this object in view should receive the cordial support, not only of the medical profession as a body, but of all intelligent people as well. In several States legislation has already been enacted with the aim of supporting this laudable endeavor, and in many others, including Pennsylvania, agitation of a similiar nature is in progress. The time is not distant when in every State in this country newborn children will be surrounded by such legal safeguards as shall protect them from blindness due to conjunctival infection during or soon after parturition. In this commendable effort the Medical Society of the State of Pennsylvania and the Philadelphia County Medical Society have actively engaged, each having appointed committees to which the matter was given in charge. These committees have formulated the following preamble and resolution for presentation to the Legislature:

WHEREAS, Statistics, compiled in this country and Europe, demonstrate that fully 25 per cent. of the blind owe their affliction to an inflammation of the conjunctiva, appearing a few days after birth; and

WHEREAS, Experience has proved that the inflammation can be cured and the eyesight saved in the majority of cases if treatment be instituted at an early stage of the disease; and

WHEREAS, Destruction of the eyes and blindness are usually the result of delay of treatment, be it

Resolved, That we heartily recommend that the people of the State of Pennsylvania, represented in Senate and Assembly, do enact as follows:

SECTION 1. Should one or both eyes of an infant become inflamed or swollen or reddened at any time within two weeks after birth, it shall be the duty of the midwife or nurse having charge of such infant to report in writing within six hours to the Health Officer or some legally qualified practitioner of the city, town, or district in which the mother of the child resides, the fact that such inflammation or swelling or redness exists.

SEC. 2. Any failure to comply with the provisions of this Act shall be punishable by a fine, not to exceed two hundred dollars, or imprisonment, or both.

A bill embodying the recommendations of the resolution was to have been presented to the Legislature on March 25th. It should receive the unanimous support of the members of that body, and should be adopted without delay, having, as it does, so important and direct a bearing upon the material welfare of the Commonwealth.

Health and Athletics.—In an interesting lecture delivered before the Shaftesbury Club, Oxford, Sir Benjamin Ward Richardson (*Asclepiad*, second quarter, 1894–'95, p. 125) considered, in his usual masterly manner, the advantages and disadvantages of athletics, together with the effects of special exercises and the part that exercise should hold in university life. He contended that good exercise combines mental with physical endurance, and that those persons are most finely balanced in whom the mental as well as the physical powers are sustained together.

Among the disadvantages are irregular development of certain parts of the body from faults in training or in the selection of unsuitable exercises. Further, the condition known as fatigue-fever may result from excessive or injudicious exercise. From a mental aspect it is considered always bad practice to permit exercise, and, particularly, competitive exercise, to affect the mind too seriously. For practical purposes exercise may be considered in three classes: The first includes physical acts in which particular groups of muscles are actively moved until they become affected, but without interference of a serious kind with the functions of the other organs of the body, such as lifting weights, working dumb-bells, and bell-ringing. These are to be suspended as soon as a muscle or group of muscles begins to be weary, as indicated by pain or soreness. In the second class belong those exercises in which the breathing or respiratory system is exceptionally affected, such as rowing. These require a certain respiratory capacity, without which they should be indulged in with great caution, as they may otherwise occasion serious respiratory or circulatory derangement. The third class of exercises includes those in which the action of the heart and the circulation are primarily and most distinctly concerned, such as running, cycling, dancing, and football. Indulgence in these calls for great prudence in order to avoid excesses. In the fourth class of exercises belong those in which the nervous system becomes particularly influenced, and in which that system is reduced in power or worn-out by efforts of too severe a kind, such as walking and climbing. In these also the danger is from excesses. The practice of subsisting on excess of animal food and the taking of heavy meals while training for manly exercise is strongly condemned. The diet, it is contended, should be of a mixed kind, with rather a tendency to a vegetarian fare, and the meals should be equally divided into four moderate portions per day in nearly equal quantities. Water, pure and simple, is undoubtedly the best drink. The clothing should be porous, so as to allow the freest perspiration from the skin. For good work, from seven to eight hours of sleep in the twenty-four are actually necessary. Every care should be taken to avoid mental excitement in competition. Smoking is to be eschewed, and the bath is to be taken regularly as a good aid.

A Year at the Eastern Penitentiary.—From the Annual Report of the Penitentiary for the Eastern District of

Pennsylvania for the year 1894 it appears that with an average daily population of 1300 there were but 12 deaths; there were besides 31 other cases of illness, of which 16 were cured, 5 improved, and 10 still under observation. Considering the character of the population, together with the previous habits of life of its individual elements, in connection with the depressing and otherwise unfavorable influences of incarceration, these figures must be considered as quite creditable to the hygiene and medical management of the institution.

It is an interesting sociologic fact that the inmates are derived largely from the idle classes. Less than one-seventh of those admitted had trades. The obvious lesson ought not to be lost. The best antidote to all forms of vice and evil is useful occupation. More than half of the prisoners were, by their own admission, "moderate drinkers," while nearly 30 per cent. confessed "occasional intemperance," and but 6 of 658 were simply "intemperate." Moderation in all things is a safe precept to follow.

That imprisonment does not reform is shown by the fact that more than one-third of the sentenced had been convicted once or oftener before. In the absence of other corrective measures, it appears that it might be well to add a special penalty for successive convictions.

Newspaper Reports of Prolificness.—According to a report much republished of late in the newspapers, a certain couple called Mr. and Mrs. George G. Danville, a farmer and wife said to be living near Yankton, South Dakota, were reported as having twenty-seven children, all born in triplets, the oldest being less than thirteen years old. Having had some experience in the falsity of such reports, we wrote to a reputable physician of Yankton, who investigated the story and reports that no such persons live or ever have lived in the county. Twenty-eight letters for "Mr. Danville" are lying unclaimed in the Yankton post-office. One wonders what motives inspire the newspaper-reporters in periodically starting such stories on their rounds. The custom shows how skeptical medical writers and statisticians must be in repeating these concoctions of the vivid reportorial brain.

The Influence of Heredity on Length of Life.—Sir Benjamin Ward Richardson (*Asclepiad*, second quarter, 1894-'95, p. 154), in a study of the history of five-hundred individuals whose deaths were recorded side by side with their parentage, found that within a certain range the combined years of parentage, if divided by two—accidents, of course, being excluded—presented fairly the life-value of the offspring. The results were closer when the grandparentage was included in the calculation. It was further observed that, when the parentage had arrived at a good age, there was a tendency on the part of the offspring to improve on it.

SELECTION.

THE MUTILATION-MARKET AND THE BUSINESS OF MENDICANCY.

AUSTRO-HUNGARY is acquiring an evil preëminence in the manufacture of deformity and "lusus naturæ." Some eighteen months ago we commented on the discovery made by the Croatian police of a regular mutilation-den, where boys and girls of tender years were distorted or maimed to supply the mendicancy-market—and where, by fracture or by continuous pressure between boards tightened by screws, the legs and arms and spinal columns of these poor little victims were made to assume monstrous shapes—where even the eyes were gouged out and artificial sores created—all to provide the traffickers in street-begging with "objects" wherewith to solicit the alms of the benevolent. The arrest and punishment of these purveyors of deformity seem, however, to have put no effective stop to the practice, for we read in a Hungarian journal that at Prague a man, Proschaska by name, was taken into custody charged with selling to the firm of Ritter & Munster, of Holstein, a number of children who, by means of specially contrived alimentation, had had their growth arrested for exposure as "Liliputians" in itinerant exhibitions. For every child so stunted and maltreated the sum of 300 florins was paid. We further read that not only were the authors of the "Liliputianizing" system brought to justice, but also the unnatural parents who consented to its being applied to their offspring, and who received money for doing so. This is, of course, quite commendable on the part of the law; but we fear its heaviest punishment will have small deterrent force so long as the public does not coöperate in suppressing the "business of mendicancy." Indiscriminate almsgiving lies at the root of the whole evil. Rather than take the trouble to ascertain where relief can most worthily and effectively be bestowed, the so-called "benevolent" man will lavish his small change on every beggar who crosses his path, thereby creating half-a-dozen similar beggars for everyone he subsidizes, and depriving the really well-organized charities of the funds of which they are sorely in need. One of the most large-hearted economists of his generation, Archbishop Whately, congratulated himself at the close of his life that he never gave a penny to a beggar, but that the money withheld from such objects had been profitably bestowed on the institutions, medical and other, where succor was vouchsafed only to the deserving. If the public acted with equal wisdom and stiffened its back against the professional mendicant, while relaxing its pursestrings in support of well-accredited charities, an end would speedily be made of the "business of beggary" with all its concomitants of "mutilation-dens" and "Liliputian farms," and "lusus naturæ" manufactured and supplied to order. We hope the subject will be adequately discussed at the International Congress for the Protection of Infancy, which will meet next July at Bordeaux.—*The Lancet*, March 9, 1895.

CORRESPONDENCE.

THE ADMISSION OF IRREGULARS TO MEDICAL SOCIETIES.

To the Editor of THE MEDICAL NEWS,

SIR: In the Editorial Comments in THE MEDICAL NEWS of March 16th you speak of the action of the Cleveland Medical Society in voting to admit irregular practitioners to its membership. This motion was on reconsideration not favorably acted upon, but as one of those who voted in favor of the motion, I would like to give my reasons, as I do not believe that I look at the matter from the same standpoint as the majority of those who voted in favor of this freer admission to membership.

Undoubtedly the great majority of homeopathic practitioners are men ignorant of the fundamental branches of medicine; especially is this true with respect to physiology and pathology. The younger and the brighter men who have been unfortunate enough to be educated in a homeopathic school soon realize this after being admitted to practise. But the regular societies make martyrs of them, and they must be homeopaths or nothing. If they were allowed to come into the regular societies without going down on their knees and confessing that they have been sinners, and being forced to renounce their previous faith, they would soon after admission stop preaching homeopathy, as they became accustomed to their new positions, with that gradual change of mind that good fellowship produces. The majority of them now do not practise homeopathy, but they are forced to preach it in self-defence.

If the admission to the regular medical societies was based upon merit and ability, the homeopathic societies would gradually lose all their better lights, and the men who belonged only to their societies and could not join the regular would soon be recognized by the public as an inferior class of men, while now the public regard them as martyrs, the homeopaths saying, "they believe one thing, we believe another—it is only a matter of opinion."

Hoping to see the day when homeopathy will die a natural death from lack of condemnation,

I remain,
Very respectfully yours,
Optimus.

Cleveland, Ohio.

[We are glad to learn that the Cleveland Medical Society, which has shown itself to be both progressive and enlightened, has receded from the unwise position that it took in sanctioning affiliation with sectarians. We regret, however, to be unable to agree with our correspondent in the stand that he takes. We would not ask any reputable physician to fall upon his knees and make confession in order to gain admission to a regular medical society, but the least that he could do would be to drop all sectarian designation and renounce dogma of any and all kind, for science knows neither creed nor dogma. Better still would it be to secure the indorsement and the degree of some recognized regular college.—Ed. The Medical News.]

NEWS ITEMS.

The Shelby County Medical Society will hold its seventh annual meeting at Shelbyville, Indiana, on April 8, 1895. The following program has been arranged: Address of Welcome, Dr. H. M. Connelly. Is the Removal of the Rectum for Malignant Disease Ever Justifiable? Dr. J. M. Mathews, Louisville. A Plea for Surgical Interference in Malignant Growths, Dr. A. C. Bernays, St. Louis. The Management of Fever and its Sequelæ, Dr. Jas. H. Taylor, Indianapolis. Gastro-enterostomy, Dr. R. Harvey Reed, Columbus, Ohio. Cholecystotomy, Dr. Edwin Ricketts, Cincinnati. Hysterical Joint-affections, Dr. P. S. Conner, Cincinnati. Tuberculous Peritonitis, Dr. L. H. Dunning, Indianapolis. Quinsy—Its Causes and Prevention, Dr. L. C. Cline, Indianapolis. A Paper, Dr. R. B. Hall, Cincinnati. The Indications for Operative Treatment in Fibroid Tumors of the Uterus, Dr. L. S. McMurtry, Louisville. Gangrene—Report of a Case, Dr. M. Drake, Shelbyville, Ind.

Dr. William S. W. Ruschenberger, an eminent naval surgeon and scientist, died March 24th in Philadelphia at the age of eighty-eight years. He was a graduate of the University of Pennsylvania and served with distinction in the medical service of the U. S. Navy. In 1871 he was commissioned Medical Director on the retired list, with the relative rank of Commodore. He was an active member of the Academy of Natural Sciences, whose Vice-President and President he had successively been. He was a notable Fellow of the College of Physicians, whose Secretary and Vice-President he had been. He was also a member of the American Medical Association, of the American Philosophical Society, and of the Historical Society of Pennsylvania. He had made a considerable number of contributions to scientific literature.

New Occupation for Blind Persons.—It is stated that in Japan massage is practised almost exclusively by blind persons. The idea is that the sense of touch is so much more delicate and developed in those who have lost their vision that the employment of them as "masseurs" and "masseuses" is quite in accord with the natural fitness of things. Blind persons are largely used for this purpose in St. Petersburg, and at a large massage-school there the professor is also blind. Doubtless were the massage-establishments in England to be officered by blind male and female persons the suspicion raised against them that they were used for improper purposes would be removed. But it does not do to be certain of anything in this world.—*Medical Press and Circular*, March 6, 1895, p. 258.

Dr. John A. Ryder, Professor of Comparative Embryology in the University of Pennsylvania and a very distinguished embryologist, died on March 26th, at the age of forty-three years. He was born near London, Franklin County, Pennsylvania, and received a common-school education, later becoming a Jessup scholar in the Academy of Natural Sciences of Philadelphia. He was for a time embryologist to the United States Fish Commission, and made numerous valuable contributions to the art of fish-culture and in other departments of biology. In 1886 he was made Professor of Comparative Embryology in the University of Pennsylvania. He was a strong advocate of the mechanical theory of evolution.

The Tri-State Medical Society of Iowa, Illinois, and Missouri will hold its next meeting at St. Louis, April 2, 3 and 4, 1895. A most extensive program has been prepared, and the meeting promises to be a highly successful one. The society will make the Planters' Hotel its headquarters. A large banquet will be held on April 3d. The various railways have reduced the rates of fare. Intending participants should ask their local agents for a certificate, to be countersigned by the Secretary of the Society.

Meetings of State and National Medical Societies:

	Meets.	Next meeting.
American Academy of Medicine.	May 4-6, 1895	Baltimore.
American Association of Genito-urinary Surgeons.	May 28-31, 1895	Niagara Falls, N. Y.
American Climatological Association.	June 13-15	Hot Springs, Va.
American Dermatological Association.	Sept. 17, 1895	Montreal, Can.
American Electro-Therapeutic Association.	Sept. 3, 1895	Toronto, Can.
American Gynecological Society.	May 28, 1895	Washington, D. C.
American Laryngological Association.	May, 1895	Rochester, N. Y.
American Medical Association.	May 7, 1895	Baltimore.
American Neurological Association.	June 5-7, 1895	Boston, Mass.
American Ophthalmological Society.	July 24, 1895	New London, Conn.
American Orthopedic Association.	Sept. 19-21, 1895	Chicago, Ill.
American Pediatric Society.	May 28, 1895	Hot Springs, Va.
Arkansas Medical Society.	May 1, 1895	Little Rock, Ark.
Army and Navy Medical Association.	May, 1895	Decatur, Ill.
Association of American Physicians.	May 28-31, 1895	Washington, D. C.
Association of Military Surgeons of the United States.	May 21-23, 1895	Buffalo, N. Y.
British Medical Association.	July 30-Aug. 2, 1895	London, England.
Canadian Medical Association.	Aug. 28-30, 1895	Kingston, Ont.
Colorado State Medical Society.	June 18-20, 1895	Denver, Col.
Connecticut Medical Society.	May 1, 1895	New Haven, Conn.
Florida State Medical Society.	April 16, 1895	Gainesville, Fla.
Idaho State Medical Society,	Sept. 9-11, 1895	Boise City, Id.
Illinois State Medical Society.	May 14-16, 1895	Springfield, Ill.
International Congress of Gynecology & Obstetrics.	September, 1896	Geneva, Switzerland.
International Congress of Hydrobalneotherapy.	1895	Ostend.
International Medical Congress.	August, 1896	Moscow, Russia.
Iowa State Medical Society.	April 17, 1895	Creston, Ia.
Kansas State Medical Society.	May 16, 17, 1895	Topeka, Kans.
Kentucky State Medical Society.	June 12-14 1895	Harrodsburg, Ky.
Louisiana State Medical Society.	May 7, 1895	New Orleans, La.
Maine Medical Association.	June 5, 1895	Portland, Me.
Massachusetts Medical Society.	June 11, 12, 1895	Boston, Mass.
Medical and Chirurgical Faculty of Maryland.	April 23, 1895	Baltimore, Md.
Medical Association of the State of Alabama.	April 16-19, 1895	Mobile, Ala.
Medical Association, District of Columbia.	April 2, 1895	Washington, D. C.
Medical Association of Georgia.	April 17-19, 1895	Savannah, Ga.
Medical Association of Montana,	April, 1895	Anaconda, Mont.
Medical Society of the State of California.	April 16, 1895	San Francisco, Cal.
Medical Society of Delaware,	June 11, 1895	Wilmington, Del.
Medical Society of the Missouri Valley.	March 21, 1895	Sioux City, Ia.
Medical Society of the State of New Jersey.	June 25, 26, 1895	Cape May, N. J.
Medical Society of the State of North Carolina.	May 14-16, 1895	Goldsboro', N. C.
Medical Society of the State of Pennsylvania.	May 21, 1895	Chambersburg, Pa.
Medical Society of the State of Tennessee.	April 9, 1895	Nashville, Tenn.
Medical Society of Virginia.	October	Wytheville, Va.
Medical Society of West Virginia.	July, 1895	Elkins, W. Va.
Michigan State Medical Society.	June 4, 1895	Bay City, Mich.
Mississippi State Medical Association.	April 10, 1895	Jackson, Miss.
Mississippi Valley Medical Association.	September	Detroit, Mich.
Missouri State Medical Association.	May 21, 1895	Hannibal, Mo.
National Association of Railway Surgeons.	May 1-3	Chicago, Ill.
Nebraska State Medical Society.	May, 1895	Grand Island, Neb.
New Hampshire Medical Society.	May 30, 31, 1895	Concord, N.H.
New Mexico Medical Society.	July 10, 1895	Las Vegas, N. M.
New York State Medical Association.	October 15-17	New York City
Ohio State Medical Society.	May 15-17, 1895	Columbus, O.
Ontario Medical Association.	June 5-6, 1895	Toronto, Ont.
Oregon State Medical Society	June, 1895	Portland, Ore.
Rhode Island Medical Society.	June 6, 1895	Providence, R. I.
South Carolina Medical Association.	April 24, 1895	Columbia, S.C.
Texas State Medical Society.	April 23, 1895	Dallas, Tex.
Tri-State Medical Society.	April 2-4, 1895	St. Louis, Mo.
Vermont State Medical Society.	October 10, 11	Burlington, Vt.
Washington State Medical Society.	May, 1895	Seatle, Wash.
Wisconsin State Medical Society	June 5-7, 1895	West Superior, Wis.

Meetings of Philadelphia Medical Societies:

	Meets.	Next meeting.
Academy of Surgery,	1st Monday of month, Oct.—June.	April 1
College of Physicians,	1st Wednesday of month, Sept.—June.	April 3
Section of Gynecology,	3d Thursday of month, Oct.—June.	April 18
Section of Ophthalmology,	3d Tuesday of month, Sept.—May.	April 16
Section of Orthopedic Surgery,	3d Friday of month, Oct.—April.	April 14
Section of Otology,	1st Tuesday of month, Oct.—May.	April 2
Section of Surgery,	2d Friday of month, Oct.—May.	April 12
County Medical Society,	2d and 4th Wednesdays of month, Sept.—June.	April 10
Neurological Society,	4th Monday of month, Oct.—April.	April 22
Obstetrical Society,	1st Thursday of month, Sept.—June.	April 4
Pathological Society,	2d and 4th Thursdays of month, Sept.—June.	April 11

BOOKS AND PAMPHLETS RECEIVED.

Medical News Visiting List, 1895. Thirty Patients per Week. Philadelphia: Lea Brothers & Co., 1894.

Mysophobia. By S. V. Clevenger, M.D. Reprinted from the Western Medical Reporter, 1894.

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ORIGINAL ARTICLES.

THE PRESENT TREATMENT OF URETHRITIS IN NEW YORK.[1]

BY RAMON GUITÉRAS, M.D.,
OF NEW YORK,
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THE question of the treatment of urethritis is always an interesting one, because, although the disease is common, no specific has yet been found, and every new remedy has been discarded after universal trial, and physicians come down again to old routine treatment or grasp faintly at some new idea with which they perhaps do not fully agree.

The title of my paper may seem strange, but I have chosen it, thinking that the metropolitan treatment of urethritis is as far advanced as any and in order to avoid reviewing the immense amount of literature that I would have to were I to consider it from a broader standpoint.

The methods of treating this trouble in our first-class institutions and private practice seem to be quite similar, and, although different men cling to different hobbies and seem to have different results from the same methods, yet I may say that the treatment on the whole seems rational and conservative. In the best dispensaries the treatment is excellent and carried out with the utmost care, and may be outlined somewhat as follows: At present the craze for examining the discharge for the gonococcus seems to have abated, and most men seem to have arrived at the conclusion that in nearly every acute running case, and in by far the majority of the subacute cases and in those of gleet, the germ is present, and that it is quite exceptional to find it absent. This puts the consideration of the disease on a basis more similar to that of some years ago, and leads me to consider all such cases of evident acute and chronic urethral discharge as urethritis, and not by the names of gonorrhea, specific and non-specific urethritis, strains, etc. I will, therefore, first speak of acute anterior urethritis, meaning the ordinary, fresh, acute case before the process has travelled back beyond the compressor urethræ or cut-off muscle. In this condition the methods of treatment are different. Almost all agree on giving diluents in the acute stage, usually some of the potassium-salts in large draughts of water. A few others give anti-blennorrhagics, cubebs, copaiba, sandal-wood oil, or santal midi. These, together with restricted diet, seem to be all that are generally advised internally in this stage.

Locally, the treatment varies more. A number give simply hand-injections of astringents, principally the zinc-salts in mild solutions, to be used at home, while others give anterior irrigations of a saturated solution of boric acid, or a 1 : 4000 solution of potassium permanganate through a fountain syringe having an elevation of two or three feet. In connection with this local treatment hot sitz-baths and frequent immersions of the organ in hot water are advised. The more conservative do not give any urethral treatment during the acute stage, nor do they recommend anti-blennorrhagics, advising only restricted diet, diluents in large quantities of water, hot sitz-baths, and frequent immersions for the first ten or fifteen days.

The acute stage having passed and the condition having become subacute, the diluents are kept up; also in many instances the anti-blennorrhagics, while the astringent hand-injections are increased a little in strength. The conservatives, whom I spoke of before as giving neither injections nor anti-blennorrhagics in the first stage, now become emboldened, and add these, singly or combined, to their former treatment. If these cases now become indolent, many resort to silver nitrate and irrigations of solutions varying in strength from 1 : 16,000 to 1 : 2000 are given, either anteriorly or else by injection into the bladder, and allowing the patient to expel them by urination afterward.

Cases appearing with a subacute discharge, whether fresh or old, are put on the same treatment as those that have passed into the subacute stage. In chronic cases hand astringent injections, mercuric chlorid anterior irrigations, or permanganate injections into the bladder, to be afterward expelled by urination, are generally used.

We now come to the second part of our treatment—that is, of posterior urethritis, acute, subacute, and chronic—as it occurs in connection with one or another of the conditions of acute, subacute, or chronic urethritis.

Posterior urethritis is the extension of an anterior urethritis into the posterior urethra. Some authorities say that this extension always takes place, but that it is often so mild and transient as not to be noticed, while others estimate it as occurring in from 20 to 90 per cent. of the cases. This variance probably depends upon the fact that the difference between posterior urethritis and inflammation of the bladder were formerly not well understood, and because the Ultzmann test and other tests for locating posterior urethritis had not become so extensively practised.

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[1] Read before the Academy of Medicine, February 12, 1895.

When the posterior urethritis is acute the diluents are usually kept up. The anti-blennorrhagics are given by some and not by others, whilst the local treatment, when used, generally consists of silver nitrate employed in different ways. Some make at this time silver-nitrate instillations into the deep urethra, beginning at one grain to the ounce, depositing from five to twenty drops at a sitting, and increasing in strength, while others inject a few ounces of a 1 : 2000 solution into the bladder, allowing the patient to expel it by urination, and increasing this gradually to a greater strength. Anterior injections are usually omitted in these cases. The more conservative not only omit the anterior injections, but they do not trust to the use of instruments for treatment, relying on alkaline diluents, hot rectal enemas, etc., while the symptoms are acute, but taking up the stronger treatment when they become subacute.

When a subacute anterior and posterior urethritis occur together the treatment again varies, some using astringent injections of silver nitrate, potassium permanganate, or mercuric chlorid, which they inject into the bladder and then have the patient expel by urination, while others make deep instillations of strong silver-nitrate solutions and anterior endoscopic applications, recommending boric-acid solutions to be used as an injection at home.

The endoscope is not used as a routine in dispensary-practice, and seems, with the gonococcus, to be losing favor in dispensary-work.

The treatment of subacute urethritis or gleet dependent upon strictures seems to be alike with all, the rule being to dilate by sounds, as many as possible, and to cut those offering too much resistance to dilatation.

In hospitals the treatment varies in that more care can be taken of the patients and that directions for rest, baths, immersions, diet, etc., can be more thoroughly carried out. Patients treated by irrigating methods are more carefully attended to, and therefore show better results, as they can have the irrigations twice a day, with the opportunity of resting after receiving them.

In private practice patients are treated more as they are in dispensaries, as they belong to the ambulant class. The directions regarding diet, baths, rest, etc., are, however, much better carried out, and patients are often found who will come twice a day if a course of treatment by irrigations of potassium permanganate, mercuric chlorid, boric acid, or silver nitrate is recommended. Again, the surgeon can give more time to the treatment of the individual himself, who is not subjected to the unskilful handling sometimes received from untrained assistants and nurses.

In my own cases I usually treat the acute stage by diluents and anterior astringent hand-injections. The diluent used by me at present consists of a tablet of potassium bicarbonate and potassium citrate containing enough citric acid to cause effervescence on being thrown into a glass of water, after which effervescence the solution would contain five grains of each of the potassium salts. These tablets are made for me by Fraser, and have the name of the "A. B. C. effervescing diluent tablet." I recommend them to be taken, one every three hours in a glass of water. My astringent hand-injection is a modification of Ultzmann's. It is constituted as follows:

℞.—Zinci sulphatis Aluminis Acidi carbolici	āā	gr. v.
Glycerini		f℥ss.
Aquæ destillatæ	q. s. ad	f℥iv.
M.		

This is to be used three times a day after urinating and washing the anterior urethra with hot water. In rare cases, when there is a great deal of inflammation about the glans and prepuce, with perhaps lymphatic glandular complications, I do not give the injections, but simply the diluent, hot sitz-baths, a purge, followed by Rochelle salts every morning, and plenty of water. I also regulate the diet, cut off alcoholics, pepper, and tobacco, order a suspensory bandage to be worn constantly, and show my patients how to make a butterfly-dressing to soak up the discharge.

After using many formulated injections, I have at last come down to three, which seem to be the most efficacious. If the modified Ultzmann just spoken of has no effect, I order a stronger one of the following constitution:

℞.—Zinci sulphatis		gr. x.
Extracti hydrastis fl.		f℥ss.
Aquæ rosæ	q. s. ad	f℥iv.
M.		

The hydrastis used is the colorless variety, as the ordinary fluid extract has such staining properties. If this fails, I use a still stronger injection, one of Ricord's favorites, which has the following composition:

℞.—Zinci sulphatis		gr. x.
Plumbi acetatis		gr. xv.
Tinct. catechu Tinct. opii	āā	fʒj.
Aquæ destillatæ	q. s. ad	f℥iv.

This course of injections, in connection with diluents, will usually cure an ordinary case of urethritis when no posterior urethritis occurs.

If posterior urethritis does occur, I leave off my anterior hand-injections, but continue my diluents, with ten drops of belladonna three times a day in addition for the tenesmus. If the process is a very acute one, I keep the patient in bed, allowing him to get up only for two hot sitz-baths a day. I put him on a milk-and-vichy diet. If the belladonna and the diluent are not enough to control the tenesmus, I omit them, and give instead suppositories of extract of belladonna and morphin, each one-quarter of a grain. I give the patient Rochelle salts for his bowels, and in case they do not produce the desired effect, give hot water enemas containing a little glycerin. So soon as there is a little abatement of the symptoms, I begin to give instillations of silver nitrate, one grain to the ounce every other day at the outset, and gradually increase in strength and put my patient on sandal-wood oil, or santal midi capsules. If the sandal-wood oil, I begin with fifteen drops and increase five drops a day; if santal midi capsules, I begin with one capsule and run up to three three times a day. If the santal midi does not do well, I give cubebs, copaiba, or the Lafayette mixture in the order of preference mentioned. This treatment will usually cure the posterior and hold the anterior urethritis in abeyance, which I then begin to treat again with mild astringent hand-injections.

If the trouble is rebellious to treatment and continues in a subacute form, I use once a day anterior irrigations of a 1 : 3000 potassium permanganate solution from a fountain-syringe elevated two feet, through a retro-injecting rubber tube passed into the bulbous portion of the urethra; and if there is a subacute posterior urethritis associated with it I allow it to run back into the bladder, either by increasing the elevation of the fountain-syringe to five feet and compressing the meatus, or by slipping the end of the catheter beyond the cut-off muscle. In cases in which this fails I substitute a weak solution of silver nitrate, beginning with 1 : 8000, and increasing to 1 : 1000, if necessary. It is not until these methods have failed that I begin to do anything with the urethra. I then make a careful examination with an acorn-bulb bougie, and in case a narrowing is found, or stricture, I dilate with an Oberlander dilator or an ordinary Otis urethrotome. I find that for strictures of the first four inches a straight Otis urethrotome works admirably as a dilator. After dilating by a slow process, one or two millimeters at a sitting, I pass sounds of the Otis curve, anointed with equal parts of the ointment of red mercuric oxid and vaselin. If the anterior stricture is deeper than four inches, I prefer the Oberlander.

The urethra having a smooth bore and the gleety discharge continuing, I make an endoscopic examination and silver-nitrate application through it.

Of course, if a patient has had several attacks of urethritis, all of which have been of a slow or a relapsing type, I suspect strictures earlier in the disease, and do not put my patients through so many changes, relying on the cure of the stricture for the cure of the trouble.

In my hospital practice, and formerly in out-patient departments and dispensaries, I have used a treatment for acute and subacute anterior urethritis by daily injections of a mild solution of silver nitrate each time increased a little in strength. My method has been as follows: The patient is put on a diluent mixture and a hand astringent injection, the one used being the modified Ultzmann's, previously referred to. I then give once a day an injection of a silver-solution in the following way: The patient, after passing urine, has his anterior urethra washed out with warm water, and a syringeful of silver-solution is then injected and allowed to escape immediately. A syringeful of a saturated solution of boric acid is then injected and retained for five minutes, and the patient is then requested not to pass his urine until as long a time as possible has elapsed.

The greatest care should be taken in the preparing and keeping of this solution, and it should never be increased beyond ten grains to the ounce, or 2 per cent. in strength. The best method of keeping it is to have ten colored bottles filled with the different strengths of the solution, from one to ten grains to the ounce. These injections should be made with the greatest care, increasing one grain in strength each day. No pain is noticed by the patient excepting a little burning on the third and fourth injections. The patient's discharge is usually checked or reduced to a little watery secretion on the seventh or eighth day, when the silver-treatment is left off and the patient is put on anti-blennorrhagics and hand-injections for a week, and directed not to drink or indulge in venery or other excesses for a period of three weeks. It is never necessary to go beyond a ten-grain solution. If the discharge has not ceased at this period, the treatment should be changed for astringent injections and anti-blennorrhagics. By this method eighty per cent. of the cases treated have been apparently cured in less than ten days. If posterior urethritis occurs or complications develop, such treatment should be immediately changed.

From my observations I derive the following conclusions: (1) That it is impossible to treat urethritis according to any given rule at the present day, a successful method not as yet having been discovered.

2. That specialists are much better able to treat it successfully than the general physician, and, to go further, that a patient receives better treatment from

a specialist in a dispensary than from a general physician in private.

3. That injections checking all discharge or reducing it to a moisture about the meatus, such as those of mercuric chlorid, potassium permanganate, and silver nitrate, are the most successful means of treating a fresh attack, and that of these silver nitrate is the one upon which most reliance can be placed.

4. That in all cases the patient should be treated conservatively, and the treatment should be modified according to the symptoms.

23 WEST FIFTY-THIRD ST.

CYSTS OF THE MAXILLA CONNECTED WITH THE TEETH, WITH REPORT OF A CASE.

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CYSTS of the maxilla, resulting from the proliferation in the substance of the bone of the epithelial cells composing a tooth-matrix which has not made its way to its normal situation in the alveolar process, but which has remained imbedded in the bone, are not a strange pathologic condition to the surgeon or the pathologist. Cyst-formation resulting from the displaced matrix of a tooth is of scientific interest because of its bearing upon Cohnheim's theory of tumor-formation by cell-proliferation from a matrix of embryonal cells. In the case of a dentigerous cyst there is an inclusion in the mesoblastic bone of the epithelial cells of the tooth-matrix, which cells at some subsequent period undergo proliferation that may be typical or atypical, and become productive of a neoplasm that in almost every instance is a cyst. In the production of a dentigerous cyst, however, there is no necessity for the presence of the matrix of embryonal cells insisted upon by Cohnheim as being essential in the production of a true tumor. The cells composing the matrix may be typical in every respect, and are productive of a cyst because they are compelled to carry out their life-history in an abnormal situation, with retention of fluid in the cavity produced during the attempt at tooth-formation. There is no progressive and atypical growth of the epithelial structure characteristic of a true cystoma. This variety must be classified as retention-cysts, but they differ materially from what are at the present time described as retention-cysts, *e. g.*, in which there is occlusion of the outlet of some otherwise normal secreting structure, with consequent retention, the most frequently met examples of which are the sebaceous cysts or wens. The retention-cysts due to inclusion of epithelial cells in the mesoblast should be called *retention-cysts from inclusion*, in contradistinction to the retention-cysts from occlusion.

Another variety of dentigerous cysts that must be differentiated pathologically from the retention-cysts just described is produced when the epithelial cells composing the imbedded tooth-matrix serve as a true tumor-matrix, and by exhibiting an atypical and lawless proliferation, perhaps without the slightest evidence of tooth-formation, become productive of a true proliferating cystoma, with the formation of numerous cyst-cavities. In the simple variety, *i. e.*, the retention-cyst, from an included tooth-matrix the progressive enlargement is due to tension, as the contents of the cyst increase, and, while there is the same influence of tension exerted in the true cystoma, there is what is more important and characteristic, *i. e.*, the increase in the epithelial neoplasm as the result of the unlimited cell-proliferation.

We therefore divide cysts of the maxilla resulting from displaced tooth-matrices into the following two varieties :

Unilocular dentigerous cysts, resulting from the matrix of a temporary or permanent tooth failing to find its way to the alveolar border of the jaw, and the cells of which matrix have subsequently undertaken the completion of their inherited capacity, viz., the formation of a perfect tooth, with the various pathologic conditions possible to result from even a typical cell-proliferation in this abnormal situation. Such a cyst is not necessarily a true tumor, but may be simply "a retention of fluid between the cuticular dentis and the crown of the tooth, distending the tooth-follicle into a cyst lined with epithelium, and containing in some part of its wall, or, more rarely, free in its cavity, a more or less completely developed tooth, or even teeth." (Hektoen.)

This variety is the cogener of a cyst resulting from retention of a Graafian follicle in the stroma of the ovary, with accumulation of fluid in the cavity by transudation and mucous degeneration of the epithelial cells lining the cyst-cavity, and which has an entirely different pathology from a multilocular or proliferating cystoma of the ovary, which also arises from the retention of a Graafian follicle, but which is an allied condition to the *second variety*, *e. g.*, *the multilocular or proliferous dentigerous cysts*, which the imbedded epithelial cells constitute a true tumor-matrix, and by exhibiting unlimited proliferating capacity, give rise to a constant and progressive extension of the epithelial neoplasm in the substance of the jaw. This variety must be considered as a true cystoma. We have not included in this classification of dentigerous cysts those found in connection with the roots of the erupted teeth. According to Magitot, they are due to inflammatory processes, with retention of the product of such inflammation in the apical cavity.

Dentigerous cysts may, of course, become carcinomatous, as may an epithelial structure in any locality.

There are interesting points in the pathology of cysts resulting from the inclusion of epithelial cells in the mesoblast that will call for solution in the future. The simple dermoids and branchial cysts have as interesting a relation to Cohnheim's theory of tumor-formation as have the dentigerous cysts and the cysts of the ovary. We may well ask, for instance, which of the branchial cysts to call tumors and which simply retention-cysts. To be sure, the epithelial cells are displaced in every case; but being where they are they show no atypical tendencies when they exhibit a lawful proliferation and continue to line the cyst-cavity as its size increases from distention. As the lumen of a varicose vein increases, the endothelial cells still continue to cover its interior; it takes an increased number to do so, and new endothelial cells are produced, but this does not allow the pathologist to classify the new endothelial cells as a variety of endothelioma. At the present stage of our knowledge concerning the etiology of tumor-formation, these differences strike one as very theoretic, but the histology of the future will demonstrate them to be real.

The clinical differences are well drawn between the retention-cysts from inclusion and the true proliferating cystomata. As an example, we may call attention to a branchial fistula, perhaps congenitally established. Here there is no retention, and consequently no development of a cyst, and if the fistula does not become occluded there will be no swelling unless infection occurs, because the proliferation of the epithelial cells lining the fistula does not give rise to a new-growth. This cannot be considered characteristic of a tumor. In the retention-cyst from inclusion the contents of the cyst do not represent the products of cell-proliferation. The fluid accumulates from transudation and perhaps secretion by the lining of the cyst; this is not characteristic of a true tumor.[1]

The case I desire to report is interesting and instructive from the fact that the cyst was the result of an imbedded supernumerary tooth-matrix, and the cyst-cavity was a considerable distance from the alveolar border of the jaw. In consequence of these conditions, the case illustrates some important facts regarding the diagnosis of the rarest form of cysts of the maxilla connected with the teeth, viz., dentigerous cysts arising from a displaced supernumerary tooth-matrix.

When the imbedded matrix is that of a permanent tooth eruption does not take place, and the examination will show an absence of the tooth from its normal situation in the alveolar process, and the history will reveal to the surgeon that this tooth never made its appearance. A dentigerous cyst arising from the imbedded matrix of a temporary tooth will have the history of absence of a deciduous tooth and subsequent interference with the passage of the corresponding permanent tooth in its journey to the alveolar process of the jaw. Consequently the absence of a tooth from its normal location in the alveolar process is the guide-post pointing to the diagnosis of a dentigerous cyst. It is evident that this history and sign are absent when the imbedded matrix is that of a supernumerary tooth. The degree of displacement of the matrix and the location of the resulting cyst will have some influence on the diagnosis, especially when the teeth are normal in number. In the case here reported the cyst-cavity was situated in the palatine process of the superior maxilla, and had no apparent connection with the teeth. In such a condition the diagnosis will be difficult, and probably a simple conjecture. Cases have been reported in which the cyst was situated in the palate bone, and even in the orbit.

The imbedding and displacement of a tooth-matrix are due to one or more of the following causes: a perfect tooth may be prevented from reaching the alveolus by the retention of a temporary tooth; the tooth may develop too deeply in the bone; it may grow in a wrong direction; the development of the fang may become arrested, or there may be some diminution in the size of the space in the alveolar border. (Salter.)

A proper diagnosis is of considerable importance, as is illustrated by the numerous cases that have been subjected to resection of the affected bone under a diagnosis of sarcoma, and in fact, if the case is allowed to progress, especially in the proliferating cystomata, this treatment may be called for even under a correct diagnosis. If a simple dentigerous cyst opens externally through pressure-atrophy exerted upon the surrounding bone, the relief of tension will put an end to the progressive enlargement of the bone. In the proliferating cystomata this is not the case, and progressive extension of the disease will still go on, unless the suppurative process has destroyed the entire tumor-matrix. In either variety we have the relief of tension and the addition of an infection with pus-microbes. In the simple unilocular variety the pathologic condition now consists of an infected cavity of the maxilla, which may or may not contain an infected, more or less perfectly developed tooth, and a sinus that remains open and discharging, or that closes and opens at varying intervals.

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[1] The etiology, pathology, and treatment of cysts of the maxilla connected with the teeth are thoroughly treated in the chapter in Holmes' "System of Surgery," devoted to *surgical diseases connected with the teeth,* which was written originally by S. James A. Salter, F.R.S. A paper containing a *résumé* of the literature was published by Hektoen in the Annual Report of Cook County Hospital of Chicago for the year ending 1890.

The case reported was one of a simple dentigerous cyst in the condition described, and in such cases a proper diagnosis is not required to lead the surgeon to institute the proper treatment, viz.: opening the cavity in the bone, removing the infected unabsorbable body, disinfecting the bone-cavity and treating it in one of the several ways, viz.: by packing with gauze, and allowing it to heal by granulation; or by endeavoring to secure a rapid definite healing; by packing with Senn's decalcified bone chips; or by allowing it to fill by Schede's blood-clot.

The difficulty of preventing post-operative wound-infection in the cavity of the mouth will make the packing of the cavity with gauze the only practical method to adopt.

The history and examination of the case revealed the following: The patient is a healthy farmer, aged forty-six years. Upon examination a sinus is found just to the right of the median line, at the reflection of the mucous membrane from the jaw to the upper lip, leading directly backward for an inch into a cavity situated in the palatine process of the superior maxilla and between the roof of the mouth and the floor of the right nasal fossa. An examination in these localities demonstrates convexities that correspond to the location of the cavity found in the bone with the probe. There is no enlargement on the anterior surface of the jaw, nor can craquement be elicited over the cavity. Discharge of pus is constant but slight. Injection of hydrogen dioxid into the sinus demonstrates the absence of any other opening into the cavity in the bone. The man's teeth are normal in number, location, and appearance, and are only remakable for their perfection. The sinus is an inch-and-a-half directly above the first right incisor. The patient remembers that the eruption of his permanent teeth was devoid of abnormality, and his parents say that his milk-teeth made their appearance and gave way to the permanent teeth in an apparently normal manner. His permanent incisors appeared at seven years of age, and the other teeth appeared without incident. On August 18, 1867, he received a severe blow on the upper jaw, and to which he attributed an enlargement of the bone on the roof of the mouth that he discovered in 1870, and that corresponded to the swelling now present, and that has, according to the patient's statement, remained without change in size since he first discovered it. The increase in size probably has been so gradual that it has not been apparent to him. I cannot imagine the sudden discovery of a swelling of the size found in the roof of the mouth at the present time.

In 1873, without any history of pain or discomfort, fluctuating swelling made its appearance beneath the mucous membrane covering the anterior surface of the upper jaw; the center of this swelling was a little below the situation of the present sinus. This swelling was incised by a physician, and the patient says a thimbleful of black, clotted blood escaped. The incision healed in a few days, and attention was not even attracted to this locality until 1881, when there was a recurrence of a similar fluctuating swelling that made its appearance in the same locality and in the same painless manner as in 1875. This was incised, healed in a few days, and there was no recurrence till 1884, when the same treatment was gone through, and this same cycle of painless swelling, incision, discharge of dark fluid, with subsequent rapid healing, was repeated a number of times between 1884 and 1892, the intervals gradually lessening. In 1892 the swelling was for the first time painful, and upon incision pus was evacuated. The physician in attendance made a larger incision than had been made at any other time and packed the cavity beneath the mucous membrane with gauze, but did not at that time express the opinion that there was a lesion of the bone. Since then the sinus has remained open and discharging, and the affection has been painless.

A diagnosis was not made further than to conclude that there was an infected cavity in the bone which should be opened, disintected, and drained. An operation was, therefore, advised. Under ether the anterior wall of the cavity was chiseled away, making an opening the size of a nickel five-cent piece. This cavity was the size of a hickory-nut, and the walls, which consisted of porous bone, were thoroughly curetted. During the curetting an imperfectly formed tooth of the size of a grain of corn was removed, which gave the appearance of the crown of an incisor covered on all but one of its surfaces with a slightly discolored dentine that was eroded in spots. The tooth was fixed in the wall of the cavity, but upon what aspect was not determined. The finding of this tooth made the diagnosis. However, it must be remarked that while the presence of a tooth in any stage of development in a cavity in the maxilla makes a diagnosis of some variety of dentigerous cyst imperative, the converse is not the case, for there may be the production of a most progressive cystoma from a tooth-matrix without the slightest exhibition of tooth-formation. In such a case the microscopic examination of the lining of the cavity would demonstrate the presence of epithelial cells, unless, as before mentioned, the cyst-cavity had become infected with pus microbes, and the epithelial structure had been destroyed by their action.

The cavity was packed with iodoform-gauze and healed rapidly. It was situated in the palatine process of the superior maxilla, and its size was compensated for by the convex projections found in the roof of the mouth and the floor of the right nasal fossa. The cavity was evidently produced by the interosseous tension resulting from the cyst-formation, and producing a bulging of the bone in the direction of least resistance.

THE ECLECTIC MEDICAL SYSTEM.

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AMONG the more prominent medical sects that engage public attention in the United States at the present time is eclecticism.

While this system, unlike most medical sects, was not the creation of any single individual, yet to the teachings of Wooster Beach may be credited the main influence that ultimately resulted in its development. Beach, who was a regular medical graduate, early turned his attention to "botanic" methods; he practised in New York City, and began promulgating his theories about 1827 by the establishment of an infirmary and school there. About 1833 he published a large work on his system, which (especially in a condensed and popular form) during the next thirty years went through many editions and had a very large sale. He posed as a reformer of the current medical practice, and styled his teachings the American system of medicine.

In 1830 measures were taken by the "Reformed Medical Society of the United States," founded by Beach, in pursuance of which a school was two or three years later established at Worthington, Ohio, to teach the reformed system, under T. V. Morrow, a pupil of Beach. This school died out about 1839, but was revived by Morrow in Cincinnati in 1842, and in 1845 was chartered as the Eclectic Medical Institute, which to the present time has continued the leading and most permanent influence in the propagation of eclecticism. In connection with it has been published the chief organ of the system, styled the *Western Medical Reformer* from 1836 to 1848, and the *Eclectic Medical Journal* since.

During the two or three decades following 1830 several groups of medical sects, mostly styled reformed systems or botanic systems, arose and existed in the United States, from the amalgamation of which modern eclecticism is derived. The lines separating most of these groups were exceedingly vague and indefinite. They had much in common: in their opposition to certain methods of contemporary medicine; in their attitude as medical reformers; in their advocacy of vegetable remedies, or, in general, of mild and easily obtainable means of medication. One large group, the Thomsonians, arose about 1810, and was in 1830 already widely disseminated. This system was quite distinct and independent from the others, but exerted much influence upon eclecticism, and ultimately most of its following was merged into the latter system. From the group represented by Beach, Morrow, and the Cincinnati school modern eclecticism can be lineally traced. Other groups arose under other "botanic" teachers or under influences which about that time seem to have had general operation. Their differences were slight, though at times giving rise to controversy.

The term eclectic was first used in 1840 by a botanic society and journal in Pennsylvania. Morrow was on friendly terms with this organization, and when the Cincinnati Institute was chartered, in 1845, the name eclectic was given to it. In the course of twenty or twenty-five years, with one or two exceptions, the various groups of botanics and reformers gradually dropped their differences, adopted the same name, and became consolidated in one body, the eclectics.

The period from about 1845 to 1860 was one of comparatively vigorous development. Literature was produced in some abundance. Periodicals came into existence, most of them as short-lived as the schools in connection with which they were chiefly published. Ten or twelve schools were organized in this period in various States, which, in most cases, expired after a brief existence. A national eclectic association was formed in 1848, but died out in a few years.

The two or three years following 1860 constituted a period of depression, and the system nearly went out of existence. Its patronage had declined; its societies, schools, and journals had mostly expired; many of the objectionable features of regular medicine had been abandoned, and many of its adherents desired to abandon the sect for the regular profession. The parent school and journal in Cincinnati, however, survived, and since that time, largely under the influence of John M. Scudder, eclecticism has had another period of development. New adherents have been gained, new schools, societies, and journals established, and new literature produced. New doctrines were developed to keep up the sect. At present there are claimed to be from ten-thousand to fifteen-thousand physicians practising the system, widely distributed, in the United States, besides some in England. There are numerous State societies, and a national association, which was reëstablished in 1870. Several journals and about ten schools devoted to the system now exist in this country, and it is legally recognized in many of the States.

The characteristic principles on which eclecticism is based were gradually developed in different periods of its history. As medical reformers Beach and his contemporaries started out vigorously opposing certain harsh and depressing methods of treatment practised in that period, especially bleeding and the use of drugs like mercury, antimony, and arsenic. This point is still emphasized by eclectic writers. The eclectics have always advocated the use of "safe and mild remedies," especially those of vegetable origin (overlooking the fact that some of the most potent and poisonous substances known are derived from the vegetable kingdom); for this reason they called themseves botanics. They have recommended and investigated the medicinal employment of native and easily obtainable plants, whence, largely, the early designation "American system." The doses given are now generally small, and administration in pleasant form is sought after.

Methods of making concentrated preparations of drugs have been developed. The eclectics have great faith in the curative properties of drugs and oppose therapeutic nihilism ; and they claim not to select, indiscriminately, simply curative means, but to make a critical selection of remedies based on the recognized nature of disease-processes and drug-action.

The group of ideas embodied in the name eclecticism developed shortly after the sect was first originated. The eclectics recognize the necessity of thorough and scientific knowledge of medical facts, profess a spirit of broadness, liberality, and individual liberty of opinion, and assert the right and obligation to adopt that which is true and best from whatever source or system.

The doctrine of specifics, which has been developed since 1860, and is now a prominent article in eclectic faith, is an amplification of the foregoing ideas. It comprises specific diagnosis, critical analysis of each individual case of disease, not only as to the general pathologic process, but as to the minutest details of symptoms, causes, and pathology, and, in pursuance of such a diagnosis, specific medication, the use of such remedies as are known to affect favorably the particular disease-expressions present. Thus, for itching of the skin with a burning sensation, rhus toxicodendron is indicated ; with stinging, apis mellifica.

The eclectics assert that disease is an impairment of the vital power—a glittering generality that may mean anything or nothing—and they emphasize the *vis medicatrix naturæ.* They claim (apparently from *post hoc, ergo propter hoc* considerations) that the teachings of eclecticism have wrought a revolution in regular medicine. They charge the regular profession with prejudice, narrowness, and exclusiveness. Superior results are claimed from their methods of treatment.

On general considerations it is difficult to see why the eclectics should separate themselves as a medical sect. The principles relating to medical investigation which the eclectics so loudly profess, and from which they name themselves, are certainly for the most part admirable ; but precisely those critical methods of research and that spirit of broadness and liberality are followed by regular medicine, as well as by the other branches of modern science. It is absurd for the eclectics to set themselves apart on these principles and to claim that they alone of medical investigators pursue truly scientific methods of research. Indeed, the innate spirit of controversy and opposition manifested by the sect must operate against the formation of perfectly logical and liberal conclusions. Sectarianism and exclusiveness are never the best agencies to elicit truth ; the bias present necessarily distorts the judgment and colors the opinions. As a matter of fact, the intellectual plane of the school, while much superior to that of other sects, is not of the highest order, and the eclectics are not so eclectic and liberal as they claim. Liberty of opinion is permitted only within the limits of established eclectic practice, and those who depart from fixed standards are branded heretics. The organization probably affords a convenient shelter for quacks, fanatics, and disaffected or inefficient persons ; the proportion of eclectic colleges which have been closed as fraudulent, for instance, is noticeable.

At the present time the differences of actual theory and practice between the eclectics and regular physicians are, perhaps, of not so great consequence as absolutely to preclude intellectual and professional fellowship. As a protest against the excessive and indiscriminate employment of bleeding and a few drugs in the early part of this century, the origin of eclecticism may have had a shadow of justification ; but that is a dead issue, and with the abandonment of such practice the sect nearly expired. Its continued existence appears to be due to its traditional spirit of controversy and bigotry.

THE SPLEEN AS A BACTERICIDE.

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Recent progress in therapeutics has been marked in two directions, one in serum-therapy, the other, by means of what are known as the organic extracts. Of the latter it is necessary sharply to distinguish two classes. The first, including cerebrin, medullin, cardein, and the like, have a value at least doubtful ; the second includes the administration of the thyroid gland for myxedema, and bone-marrow for pernicious anemia. The success of both of these forms of treatment is assured, and they rank among the most brilliant of recent achievements in medicine. In the case of both of the last-named methods, organs are used that without doubt act by supplying important constituents of the blood ; in the case of marrow formative elements of the red blood-cells, in case of the thyroid some substance unknown, possibly a ferment, which, in a way also unknown, controls nutrition-processes.

The organs that have to do in especial with the blood are the thyroid, bone-marrow, and the spleen. Of the functions of the spleen little more is definitely known than was known a short time ago of the thyroid gland. It has been thought, however, to be the birthplace of the white blood-cells. There are facts that point strongly to it as a possible agent in conferring immunity from certain diseases. Some authorities have held that the white blood-cells are the active agents in destroying bacteria that gain lodgment in the body. Whether this is true or not, it is certain that some persons live for years in very malarial regions without contracting the disease; that some people resist typhoid better than others, and that most men are exposed to tuberculous infection, and that when the disease is contracted, while some succumb, many do not. In all of these diseases—malaria, typhoid fever, acute tuberculosis, as well as pneumonia and some other germ-diseases—the spleen is markedly enlarged, as if from overstimulation in an effort to throw off the disease.

It is at least conceivable that the bacteria-killing substances, which undoubtedly exist in those diseases that admit of spontaneous cure, are elaborated in the spleen. The opinion that pulmonary tuberculosis and malaria are to a degree incompatible tends to confirm this view. Without discussing this question at length it is enough to say that Davidson (*Geographical Pathology*, vol. ii, p. 858), after giving many instances in support of the theory, summarizes as follows:

> The facts, therefore, seem to establish two of the conclusions arrived at by Lombard, first, that consumptives are less numerous in those districts where malaria is dominant than in those where it is less prevalent; second, that this inverse relation is not entirely explained by differences in climate.

The foregoing lends some color to the supposition that the malaria-soaked inhabitants of swampy regions possess an immunity from pulmonary tuberculosis. It suggests the thought that the spleen, enlarged and abnormally active from its long battle with malaria, more easily overcomes the inroads of the tubercle-bacillus. If a main function of the spleen is to furnish to the blood bactericides, the reason of our present ignorance of its function is apparent. Removal of the spleen is a rare operation, and statistics of the power of resistance to germ-diseases of persons so operated on are not procurable. That the spleen does contain substances that kill germs is beyond question. This fact is pointed out by Vaughan (The Medical News, December 23, 1893), who says, "it is certain that the spleen contains a germicidal substance, but whether we can extract it by the method of Hankin we do not know." The question of extraction may be interesting chemically; clinically it might be as well to administer spleen by the mouth, or in the form of extract hypodermically. The former method is surprisingly successful in the case of thyroid and bone-marrow.

To sum up: In acute infectious diseases the spleen is enlarged, as if in an effort to combat the effect of the poison. Some men and certain entire species of animals possess immunity, and recovery takes place from these diseases by germicides produced in some part of the body; the spleen does without doubt contain germicides, and probably, therefore, elaborates them.

It is hoped that experiments with the administration of spleen in this class of diseases, particularly in tuberculosis, malaria, and typhoid fever, may yield not only favorable results, but may throw additional light on the functions of the spleen analogous to that which has been thrown on those of the thyroid gland. Such experiments should be made as far as possible with the spleens of animals immune from the diseases experimented on.

While the foregoing considerations are purely theoretic, they are given in advance of actual experiment, with a view to induce others also to investigate the subject.

341 Prospect Street.

CLINICAL LECTURE.

SYPHILIS AND ALCOHOLISM OF THE BRAIN, SPINAL CORD, AND PROBABLY OF THE NERVES OF THE LEGS,

Followed by Hysterical Contractures of the Flexors of the Knees, and a Pronounced Variability of Certain Reflexes.[1]

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The patient before us has presented many puzzling and contradictory features since he first entered this hospital, about nineteen months ago. The history and results of repeated examinations are as follows:

William T., a male, thirty-two years of age, married, a bartender by occupation, born in England, but residing in Colorado two years, was admitted into this hospital April 26, 1893. The family history, with the exception that his father died of heart-disease, is negative. The patient had measles when a small boy, and scarlet fever when twenty-three years old, has drunk heavily and lived irregularly, but denies syphilis, although he admits repeated exposures. He states that he was in good health for a number of years preceding the illness for which he was brought to the hospital. His illness began about the middle of April, 1893, by his feeling weak, languid, and generally indisposed. On admission he was feverish, and was placed under the care of the general physician, who treated him a number of weeks for typhoid fever. During these weeks he was delirious much of the time, and did not at any time seem to be entirely conscious. As the temperature ran a very irregular course, and the fever did not subside nor the patient improve as time went on, I was asked to see him June 1, 1893, about five weeks after his admission into the hospital.

On studying the clinical chart kept of his case during the five weeks of his sojourn in the hospital before I first saw him, I found that the temperature varied greatly; it was at times nearly normal, and at other times it was two or three degrees above normal, but usually remaining about 99.5° in the evening. The pulse vacillated from 100 to 120, and the respiration registered from 16 to 28 per minute.

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[1] A clinical lecture delivered at the Arapahoe County Hospital.

Upon examination June 1, 1893, I found the patient lying in bed with the legs flexed at right angles to the thighs. On making a voluntary effort to extend the legs at the knees he succeeded in pushing the feet a few inches down toward the foot of the bed. The flexor muscles of the legs did not seem contracted, and on my attempting forced extension of the legs at the knees the legs could be almost completely extended without using much force, but they could not be straightened without causing the man to cry out with pain. There was present double partial foot-drop, but the tibialis anticus muscle of either side could be made to contract feebly and produce slight dorsal flexion of the foot. The peroneus muscles on either side were completely paralyzed. The man was unable to flex or extend any of the toes on either foot. The flexor, as well as the extensor, muscles of the knees were very weak. Complete extension and flexion of the thighs at the hips the patient was able to perform when he was lying on his side, but the hip-muscles were rather weak. The knee-jerks, the plantar, ankle-clonus, tendo Achillis, and cremaster reflexes were absent; the abdominal reflexes were present; those of the right arm were about normal, of the left increased; no masseter reflex was present, and the iris-reflex was normal. The man was greatly emaciated; but there was no group of muscles that presented a degree of wasting out of proportion to others. Two bedsores, small and superficial in character, had formed, one over the sacrum and one over the right hip. Incontinence of urine and feces had existed since the patient was brought to the hospital, and the same condition persisted at the time I first examined him. It was very difficult to determine whether the incontinence of urine was due to organic disease of the cord or to the mental condition, as the man had presented during the entire time of his stay in the hospital a condition of mental dulness that prevented his notifying the nurses when he desired to pass water, if he was capable of appreciating such a desire. On expostulating with him about soiling the bed he would promise to call for the urinal, but the bed was always found soiled and the bladder usually empty. On inserting the finger into the rectum the sphincter of the anus was found not paralyzed, but the contents of the rectum found their way into the bed, as he failed to call for the bed-pan. All the muscles of the legs responded to the faradic current, those below the knee requiring a current nearly twice as strong as those of the arms, and a considerably stronger current than the thigh-muscles. Dynamometer R., 90; L., 110. The patient is left-handed.

Sensory phenomena. It was very difficult to arrive at any definite conclusions in regard to the exact state of general sensation, on account of the patient's enfeebled mental state. It required a very great effort for him to concentrate his mind; cerebration was slow, and he did not always seem to appreciate what was said to him. The first note on tactile sense was: "Tactile sense is greatly lessened on the feet, but not entirely lost; on the legs, over the external genitalia, and around the anus it seems to be perfect." The second account of tactile sense, made about ten minutes after the first examination of this sense was concluded, was as follows: "When he is not agitated and his mind is concentrated upon what is being done, tactile sense seems to be fairly good over the feet, legs, external genitalia, and around the anus, with the exception of being slightly delayed." This sense was tested with a feather, both by holding it steadily against a part and by moving it gently. The senses of temperature, pain, posture, localization, and of the joints appeared about normal over the feet and legs. No disturbance of general sensation seemed to exist over the trunk, arms, or face. Smell and taste appeared normal. Hearing for the watch: R., ½; L., on contact. The man stated that he had been nearly deaf in the left ear since his attack of scarlet fever ten years before. The tuning-fork was better heard in the left ear. The pupils were normal in size and reacted well to light and in accommodation; the fields were normal so far as it was possible to determine; and fundi and discs showed no evidence of disease. The urine was free from albumin and sugar, and no evidence of disease of the abdominal or thoracic viscera was detected.

On August 14, 1893, about two months after the first examination the following notes were made: "His general condition has very much improved, his mind has been clear for the last month. His legs were forcibly extended at the knees about six weeks ago, and kept in this position by means of posterior splints to the legs for two weeks. He complained of some pain in the knees and posterior thigh-muscles during this time, but the inconvenience was not sufficient to keep him from sleep. On removing the splints the legs resumed their original position at right angles with the thighs, but the contractures do not seem to have increased. No contraction of any other muscles exists. The bedsores healed in about two weeks from the time attention was first directed to them. During the last four weeks, or since his mental condition became normal, he has been able to control the bladder and bowels. The sensory functions are a little more impaired than was found in the first examination. Over the feet and scrotum, on the glans penis, and around the anal region lessened tactile sense is quite perceptible. There seems to be only slight impairment of this sense on any portion of the legs. Other forms of general sensation appear a little delayed. The plantar reflexes have returned and are exaggerated; knee-jerks, ankle-clonus, and the reflexes of tne tendo Achillis are absent. Cremaster, R. is decided; L. absent, or nearly so; the other reflexes are as noted on the former examinations."

The man continued to improve in muscular strength and general appearance, and, with the exception of the flexor contractures at the knee-joints and the weakness of the dorsal flexors of the feet and extensors of the toes, he seemed in an excellent condition. Forced extension of the legs at the knees was tried, but he said it gave him so much pain in the knees that but little force was used, and the attempt was not repeated, as he refused to submit, although I offered to use an anesthetic. The pain that he complained of while extension of the legs was being tried he located in the interior of the knee-joints, and superficially just below the outer side of the knee-caps. On March 18, 1894, the flexor and extensor muscles of the knees and hips seemed to be strong. Plantar flexion of the feet could be practised with considerable force, but dorsal flexion was imperfect and weak. All the toes could be moved, the power of flexion being strong, but extension weak. All the muscles of the legs responded nearly normally to the faradic current, and muscular nutrition was excellent. The reflexes were nearly as stated at the second examination, except that both plantar and cremaster reflexes were exaggerated, and the abdominal reflexes were absent on the right side. Dynamometer, R., 140, L., 142. Tactile sense was absent only on the glans penis. It was present and apparently normally acute over the other portions of the penis, over the scrotum and around the anal region. On the outer side of the ankles and over the dorsal surfaces of the toes it was lessened and delayed. Temperature-sense seemed a little delayed over the feet and ankles. All other forms of sensation were normal.

The examination of the patient to-day shows the muscular nutrition fairly well preserved, and the slight wasting of the muscles below the knee is not much greater than we should expect from nearly two years of disuse of these muscles. Electric reaction of all the muscles is about normal. The contractures of the flexor muscles of the knees remain about the same as was observed more than eighteen months ago. There are no contractures of any other group of muscles. All the muscles are strong, with the possible exception of the dorsal flexors of the right foot, and with these the patient is able to exert considerable force. There is no ataxia of the arms, and he is able to perform movements with his legs, while lying in bed, without any appearance of incoördinated motion. The dynamometer registers R., 136; L., 150. You will remember that he is left-handed. The plantar, ankle-clonus, tendo Achillis, and knee-jerk reflexes are absent; that of the cremaster is greatly exaggerated; the lower abdominal is absent; the epigastric, right is present, left is absent; those of the arms are normal or slightly increased; the special senses and all forms of general sensation appear about normal.

Now, gentlemen, from what has this man been suffering during the last nineteen months? Before trying to answer this question by a careful study and analysis of the numerous and complex symptoms presented by the case, let us note some of the more prominent features of the clinical history. A bartender, who is about thirty-two years old, addicted to venereal and alcoholic excesses, and an irregular mode of living, after several years of apparently good health, begins, without any appreciable cause, to complain of general indisposition. Ten days later he is brought to the hospital in a weak, febrile state, the temperature very irregular, the mind clouded, and with incontinence of bladder and bowels. During the next six weeks he remains in practically the same condition. At this time an examination showed partial paralysis of the legs, more marked below the knees, slight sensory disturbance, especially in the distal portions of the legs, two pressure-bedsores superficial in character, and contractures of the flexor muscles of the knees; the knee-jerks, the plantar, tendo Achillis, cremaster, and lower abdominal reflexes are absent, and the epigastric present. A few weeks after placing him on large doses of mercuric chlorid great improvement was manifest. As soon as his mind became clear he was able to control the sphincters of the bladder and bowels. The bedsores, which had probably formed from inattention to the parts on which they were situated, healed readily. The flexor contractures of the knees persisted, with weakness of the dorsal flexors of the feet and lessened acuity of general sensation over the feet and legs. Considerable wasting of the muscles below the knees and lessened faradic irritability were present. There has been a gradual improvement in all his symptoms, except the contractures of the flexors of the knees, and to-day he would be considered practically a well man if it were not for the state of these contractured muscles. The knee-jerks, ankle-clonus, and the reflex of the tendo Achillis have remained absent throughout the course of the disease, while the plantar, cremaster, and abdominal reflexes have been variable.

The mental condition of the patient during the first two months of his stay in the hospital, and the state of the sphincters of the bladder and anus, in association with the muscular paralysis, wasting and electric changes, and the peculiar distribution of the sensory changes, indicate, positively, organic changes affecting the central, and probably also the peripheral, nervous system; yet there is, I think, a strong hysterical element in this case, as I shall endeavor to point out later on. What evidence have we of neuritis?

The disturbances of sensation observed in this patient were always most pronounced over the feet and ankles, while around the anal region, over the external genitalia and on the posterior portions of the thighs and legs sensation was normal, or nearly so, most of the time. This distribution of partial anesthesia would not occur from a lesion in the lumbar or sacral segment of the cord. If the anesthetic areas of the feet had been due to a lesion in the lower segments of the cord, we should have found anesthetic areas on the outer and posterior portions of the legs and thighs, over the external genitalia, and a saddle-shaped area, including the parts immediately around the anus and extending up the spine, this area being so named from the included parts being those that come in contact with the saddle. A lesion above the lumbar enlargment of the cord might give rise to anesthesia around the feet and ankles without affecting sensation to the same extent around the anus and over the external genitalia, but in that event the deep reflexes (knee-jerks, ankle-clonus, and tendo Achillis) would be exaggerated. In this case we find all these absent. We owe considerable to the careful clinico-pathologic work done by Thorburn, Starr, and others, in the line of spinal-cord localization, especially with reference to the distribution of the areas of anesthesia associated with the involvement of the different segments of the cord. These observations are of special importance in enabling us to distinguish areas of anesthesia due to lesions of nerves from those of the cord. We are forced to conclude that no matter what other trouble this patient has had he has also suffered from multiple neuritis affecting only the legs. The distal portion of these limbs being mainly involved, the tendency to foot-drop, with complete paralysis of the peroneus longus muscle, and almost complete loss of power in the tibialis anticus, absent knee jerk, and the variable condition of the plantar reflexes, are in keeping with the symptoms of multiple neuritis. Multiple neuritis usually affects the arms as well as the legs, but there are a number of exceptions to this rule, and I think they are most commonly found in persons addicted to the excessive use of alcohol.

The symptoms that point to disease of the spinal cord, which could not be accounted for on the theory of ordinary multiple neuritis, are weakness of the hip-muscles, slight disturbance of sensation over the external genitalia and around the anal region, incontinence of the bladder and bowels, the formation of bedsores and contractures of the flexor muscles of the knees. Some of the symptoms just mentioned require further consideration at this time before accepting them as evidences of disease of the spinal cord in this case.

You will remember that I told you, while relating the history of this patient's illness, that I found it almost impossible at one time to say whether the incontinence of the vesical sphincter was due to a lesion in the spinal cord or to mental impairment; as the incontinence of urine ceased as soon as the mind cleared up, without any tendency to involuntary discharge of the bladder since, it seems quite probable that this condition was due to the mental state of the patient. Paralytic incontinence was excluded from the fact that the usual areas of distinct anesthesia around the anus and over the external genitalia were absent. The absence of flaccidity of the leg-muscles would also aid in excluding paralytic incontinence of the bladder. Insertion of the finger into the rectum showed that the sphincter of this orifice was active. The question arose whether we had a lesion of the cord above the lumbar enlargement sufficient to cause loss of control of the bladder and bowels and to give rise to reflex incontinence of urine, or what the elder Gross termed, when applied to the bladder, "incontinence of retention," a condition for which Gowers has suggested the name "incontinence of overflow." In a case of lesion of the spinal cord above the lumbar enlargement, uncomplicated by neuritis, it would not be difficult to determine whether or not the incontinent state of the sphincters was due to mental failure or to loss of the power of their control, as such a lesion of the cord would be attended with an increase of all deep reflexes in the parts innervated by that portion of the cord lying below the seat of the lesion. In the present instance the inflammation that we have concluded involved the nerves of the legs very much complicated matters by abolishing those reflexes by the presence of which we should have been greatly aided in arriving at an accurate diagnosis. The flexor contractures of the knees themselves would indicate an affection of the pyramidal tracts of the cord; but here again there have been no contractures of the hip-muscles and none of the leg-muscles below the knees, although the calf-muscles have regained almost normal strength. Against the view of a transverse lesion of the dorsal portion of the cord is the fact that there has been no involvement of the trunk-muscles, and no area of anesthesia or hyperesthesia has been found on the trunk; neither has the man complained, at any time, of a band-like sensation around the trunk. The bedsores, one over the sacrum and one over the right hip, healed very rapidly as soon as attention was directed to them, suggesting that they were due more to pressure and want of proper care than to any trophic disturbance in the cord. I have already stated that I am not inclined to attribute the contractures of the flexor muscles of the knees to degeneration in the cord, from the fact that the associated symptoms are very different from those due to distinctive lesions of the cord. In extensive lesions of the cord causing degeneration of the pyramidal columns there would be at first extensor contraction of the muscles of the ankles and knees, and when flexor contractures take place these would involve the flexors of the hips as well as of the knees, but extreme extension of the feet at the ankle-joints would still persist. Besides, such a degree of flexor contractures of the knees as we find in this patient would in all probability be attended with more or less inability to control the bladder voluntarily at all times.

I think, then, that we may conclude that the contractures in this case are of an hysterical nature. The man's resisting with all his power any attempts to extend the legs, and his positive refusal to take an anesthetic in order that we might put his legs in a better condition, lend weight to this view, if any were needed. You may ask me what evidence have we that the spinal cord has been affected. The two principal points are weakness of the hip-muscles and slight disturbance of sensation over the external genitalia and around the anal region early in the course of the disease. If the trouble has not been a transverse, focal and diffuse myelitis, affecting the cord in any portion of its extent, in what has the lesion of the cord consisted? The exact pathologic condition must be hypothetic in a case of this kind. Two facts are evident: First, the trouble is limited to the lower portion of the cord; and, second, the affection, while sufficient to interfere with the function of this portion of the cord for some time, has not been of such a nature as to destroy the intregrity of the functioning elements. Anemia from arterial degeneration and meningo-myelitis of syphilitic origin not infrequently affect the cord. While most cases of syphilis of the cord, as first pointed out by Erb, are more serious in their nature as far as the integrity of the cord is concerned, yet we may conceive that in the early stage of syphilis of the cord, if the destructive process is arrested, function may be almost completely restored. In the cases of syphilis of the cord reported by Erb and Muchin the arms and the cranial nerves escaped. In these the deep reflexes were usually exaggerated, but, as we have seen in the case of the patient before us, the occurrence of neuritis has prevented the manifestation of such symptoms had the cord-trouble been severe enough to cause their development. Dr. Frank Fry, of St. Louis, has recently reported cases of supposed syphilis of the cord, in which the pain-sense and the temperature-sense were affected, while tactile sensbility remained nearly normal. I hope at some future time to be able to report a series of cases of cord-affections, now under my care, apparently due to syphilis.

The brain-symptoms present in the early history of this case were those of partial dementia, without any involvement of the cranial nerves. Whatever the lesion has been there are at present no symptoms remaining. It is probable that the brain-symptoms were due to some interference with the nutrient cortical arteries of the convex surface of the brain. Thickening of the pia may have constricted the vessels supplying the cortical substance of the brain, and thus have diminished the blood-supply and impaired the functioning power of the cortical cells.

The probable cause of this man's trouble is syphilis or alcohol; or both may have exerted a deleterious influence on his nervous system. We have a history of chronic alcoholism, the alcohol-habit having been established early in life and continued until the beginning of his present illness. Syphilitic infection he denies, although he admits repeated exposures. The cerebral and spinal symptoms, occurring in the same case, as they have in the present instance, have been those most commonly attributed to syphilis, but the cephalic symptoms of themselves have been typical of what we not infrequently find to follow prolonged alcoholic indulgence. Multiple neuritis is much more frequently due to alcohol than to syphilis. As we have a distinct history of alcoholism and a positive denial on the part of the patient of syphilis, you may be curious to know why I do not simply attribute the symptoms in this case to alcohol. Two reasons incline me not to ignore syphilis as an etiologic factor. One is that experience has taught me to lay but little stress on the denial of syphilis by persons given to indiscriminate sexual intercourse, and the other is that I do not remember having met with such a combination of nervous disturbances from alcohol alone as are presented by this patient. There is no doubt that chronic alcoholism renders the nervous system vulnerable to syphilis. Tamowski states that alcohol and heredity are the main factors predisposing to the localization of syphilis of the brain. It would be interesting to pursue the study of syphilis of the nervous system further, but my limited time prevents this at present. But one thought more on this subject, and I shall leave it. Charcot has called attention to the development of hysteria in the male apparently of purely syphilitic origin.

The variability of the superficial reflexes in this case is curious, and I do not remember having met with so marked an example of it before in the absence of obvious lesions to account for it. The deep reflexes of the legs have remained absent throughout the course of the disease. At the first examination, June 1, 1893, the plantar and cremaster reflexes were absent and the abdominal were present. At the time of the second examination, August 14, 1893, the patient's condition was very much improved, and the plantar reflexes had returned and were increased, while the right cremaster reflex was increased and the left absent, the abdominal still being present. On March 18, 1894, the improvement in the patient's condition was still more marked; the plantar and cremaster reflexes were exaggerated, and the abdominal on the right side were absent, on the left present. To-day the patient presents no obtrusive symptoms of disease, except the possibly hysterical contractures of the flexor muscles of the knees; the plantar reflexes are absent, the cremasters are greatly exaggerated, the lower abdominal absent, the epigastric present on the right side and absent on the left. In hysteria I have observed a variable condition of the superficial reflexes, but not in so marked a degree as this case has presented.

Judging from present indications the prognosis of this case is good so far as the organic lesion of the nervous system is concerned, although a relapse is always to be apprehended. With regard to the contractures, so long as he refuses to submit to treatment improvement will probably not take place. There is a suspicion that he is nursing this condition as an excuse to remain in the hospital.

The treatment at the time the patient first came under my care was actively anti-syphilitic, at first by means of mercury, and later by the use of mercury and potassium iodid. Improvement, especially of the cerebral symptoms, was pronounced from the time this treatment was instituted, and this was presumable evidence, but not positive, of the syphilitic nature of part of his trouble.

CLINICAL MEMORANDA.

PNEUMONIA WITH PERSISTENT HYPERPYREXIA, FOLLOWED BY TETANY—ANOTHER CASE OF TETANY.

By HENRY PAGE, A.M., M.D.,
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[Service of Drs. Griffith and Gillespie.]

V. D., an Italian, aged two years, was admitted to the hospital September 8, 1894, with a temperature of 105°. No history of her illness was obtainable. Physical examination showed a slight rachitic rosary and a very little chicken-breastedness. The fontanels were tightly closed, the skin was copper-colored, she was ill-nourished, and the whole body was covered with a thick downy hair. The heart was rapid, with an accentuated second sound, and was quite forcible. The abdominal examination was negative, except for some rachitic enlargement. A tympanitic percussion-note over the apex of the left lung and harsh bronchial breathing heard all over the chest, together with the short, jerky respiration and painful, short cough, strongly suggested a central pneumonia.

An ice sponge-bath, lasting fifteen minutes, reduced the temperature to 102°. On September 9th the left lung at its apex showed dulness on percussion, exaggerated vocal resonance, increased tactile fremitus, and harsh tubular breathing. Respiration was short and painful, indicative of extreme consolidation. At 6 A.M. the temperature was 106.8°. An ice-bath, lasting fifteen minutes, brought about a drop of 6°. Alcoholic stimulants and strychnin were freely administered, and no shock resulted. In two hours the temperature was 104.8°. Fifteen minutes in an ice-bath reduced it to 101.8°. Two hours later the temperature had again risen to 106.6°. The child was then packed in ice and her temperature taken by the rectum every five minutes. In thirty minutes a fall of only 1.6° was recorded, but she was removed from the pack in anticipation of a sudden drop, which did occur in half an hour, when her temperature was only 99°. In about forty-five minutes her temperature was again 105.6°. The ice-pack was now discontinued, and the safer method of sponging was substituted, with less efficiency however, for in spite of frequent spongings the temperature in two hours was 106.4. A tepid (80° F.) plunge-bath was then tried for ten minutes, which reduced the temperature to 105.2°. Repeated spongings all night followed, and on the morning of the 10th the temperature was only 101°.

On September 10th the temperature was low until 5 P.M. The child was during this period less restless and the breathing was much better. Physical examination showed consolidation of the apex and body of the left lung, while over the apex of the right lung and in the right axilla beginning consolidation was heralded by dulness on percussion, bronchial breathing, and increased vocal resonance. At 5 P.M. the temperature was 105°. Repeated spongings proved useless, and at 7 P.M. the temperature reached its maximum of 107°. The child was now very delirious, uttering shrill cries like a wild animal, tossing from one end of her bed to the other, and at times she would be seized with a tetanic rigidity, having convulsive twitchings and a peculiar drawn, wrinkled facial expression. Sponging was again useless, but a cold bath, accompanied with vigorous massage, reduced the temperature to 99°. With the fall of temperature all nervous phenomena disappeared, and the child slept quietly.

Her treatment all this while, in addition to efforts at reducing the temperature, consisted chiefly in administering nourishment in small amounts at short intervals. Stimulants were continually given in large amounts. Digestion and assimilation of food remained excellent throughout the whole course of the attack.

On September 11th both apices and most of the body of both lungs were consolidated. The temperature remained high, and was treated as before. At 8 P.M. the temperature was 106°. On September 12th over the body of the left lung a few moist râles, indicative of beginning resolution, were heard. The right chest remained as before. On September 13th it was noticed for the first time that almost the whole back was covered with a lesion resembling a bad burn. Several areas on the extremities of a similar kind developed in a few hours. These sores, while evidently trophic in character, were primarily due to her constant jactitation. The sores were treated as burns, and in a few days disappeared. The lungs now showed signs of active resolution. Bubbling râles were heard all over the chest. The cough was loose and the breathing was easy and natural. The temperature remained high until about midnight, when it suddenly fell by crisis, and after this never again reached 100°.

Convalescence was rapid, but the attack had left the child much emaciated and more bronzed and wrinkled than ever. In ten days she was sent to the country branch of the hospital, and remained there two weeks. When she returned a certain stiffness of the extremities was noted. This gradually grew more pronounced until the middle of October, when Dr. Griffith, then in charge, diagnosticated the condition as tetany. The contractions involved chiefly the extremities. The forearms were flexed upon the arms and the wrists upon the forearms. The little fingers were usually strongly extended, the middle and ring-fingers strongly flexed, while the index-fingers and thumbs were only partly flexed, but, like the other fingers, were always stiff. The legs were slightly flexed on the thighs, and the feet were turned inward in a state of talipes equino-varus. The jaws were slightly stiffened, showing their unnatural movements during mastication or crying.

The position as described was constant from the beginning of the attack in October until the middle of January, there having been not a single moment of relaxation. The child was always irritable and cross, crying whenever touched. Forcible movement of the limbs or arms seemed to cause pain. Excitement made the contractions stronger and made the extremities, which were usually quiet, twitch nervously. Sensation was always good, but the reflexes were all exaggerated. The blood showed 74 per cent. of hemoglobin and 5,000,000 of red corpuscles to the cubic millimeter, which put to rest any suspicions of anemia suggested by the withered appearance.

The treatment consisted of a salt-bath daily, followed by friction with the open palm. In addition to this, massage, rubbing in as much pure codliver-oil as possible, was practised for fifteen minutes daily. Codliver-oil and iron by the mouth were given in as large doses as the child could assimilate. About January 1st the first improvement in her condition was noticed. She had then a small degree of voluntary movement of the arms, and her limbs were not drawn up. She was now placed upon the strongest house-diet for a child of two years, and the improvement was startling. She has gained a great deal of flesh and has now begun to talk and take notice of all that goes on around her. Her limbs have become straight and she has quite good voluntary motion of all parts of her body, although not even yet can she feed herself. Her treatment shall be conducted on the same general lines as stated, and a complete recovery from her tetany is anticipated.

ANOTHER CASE OF TETANY.

The only case of tetany found recorded in the hospital-records is given herewith. It is interesting in connection with the case described in that it also followed an acute febrile disease and ran a course very similar to that of our case. A photograph of this child in the hospital album shows the contractions of the hand to accord more perfectly in their position with that described by Trousseau than those in our case. Trousseau speaks of the characteristic contraction as resembling the accoucheur's hand. Our case, as detailed, had not this type of contraction.

It is to be regretted that no mention is made of rickets in the case to be described, because the relation of rickets to tetany is dwelt upon so carefully by systematic writers as to lead us to suspect its presence whenever tetany is found. Our patient *was* certainly rachitic. No attack of laryngismus occurred in our case, and in the case to be recorded, as it is not mentioned, we can infer that it was never present.

The carpo-pedal spasms of laryngismus are often confused with tetany, but in these two cases the lack of any paroxysmal character of the spasms, which are, in addition, unassociated with any of the characteristic laryngeal symptoms that give laryngismus stridulus its name, certainly entitles them to be called true tetany. Both laryngismus and tetany are neuroses, and both are intimately associated with the same disease—rickets.

The report herewith is copied verbatim from the records:

October 11, 1892. E. W., three-and-a-half years of age, had diphtheria four months ago, which was followed by paralysis of the pharynx and legs. Her heart was weak, and she was subject to fainting-attacks. She gradually improved for from twelve to fourteen weeks, but even then she could walk but a few feet at a time. Last Sunday, in church, she had an alarming fainting-spell. She was carried home, and for three days had high fever. During the next three days she began to have pain, especially when handled. Then the hands went into their present position and the pain ceased. (The photograph accompanying the account shows the fingers to be huddled together in a point, with the thumb resting against the middle phalanx of the middle finger, *i. e.*, the accoucheur's hand. The hand was tightly flexed upon the wrist.)

To straighten the fingers causes the child to cry, and apparently gives pain. The hands are warm, but there is some edema of the dorsum. No relaxation occurs during sleep. Tetany was diagnosticated and bromids and tonics were ordered. These were stopped in ten days, having produced no effect.

November 2. Traction upon the hands seemed to cause no pain.

8*th*. The nurse can now almost straighten the fingers.

20*th*. The child uses the hands freely. She was allowed to get up. She complains of her feet, and cries when they are handled.

25*th*. The feet give less pain. She is improving much in general health.

TYPHOID FEVER AFTER DOUBLE AMPUTATION; RECOVERY.

By JOHN R. ESPEY, M.D.,
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D. M., twenty-eight years of age, an American, of Irish parentage, was a locomotive-fireman on a passenger-train, and was injured in a collision August 3, 1894. The accident occurred about 7 A.M., at a point eighty miles away, and I could not reach the scene of trouble until 1 P.M. Dr. Dayton, of Trinidad, accompanied me, as the telegram had stated that both legs were crushed. Upon our arrival we found the patient in a state of great shock, having lain for hours on an improvised bed on two car-seats. Both legs were crushed from a little above the middle of the leg to the foot. They had been but lightly wrapped by a physician, who did not have appliances at hand to do more. In addition to this surgical care a hypodermic injection of morphin had been given. A sympathizing passenger had also poured the contents of two half-pint bottles of very common whisky down the man's throat, which had thoroughly upset his stomach and materially added to his shock. We dressed his injuries aseptically, procuring boiled water from the engine. As the country was sparsely settled, without a suitable place to keep him, we concluded it was safer to move him to the St. Raphael Hospital in Trinidad, although we feared the eighty-mile ride before him. We placed him in a caboose, and with the engine and one trail car to lessen the jolting, we started for Trinidad. On the journey we combated shock with heat and hypodermic injections of strychnin, digitalis, and brandy.

The patient was in extreme shock on reaching the hospital, but with increased facilities for combating this condition he rallied some during the night. Copious rectal injections of a hot saline solution were added to his treatment. On the morning of August 4th his temperature was 102°, and the pulse from 140 to 160 per minute. Notwithstanding that he had not more fully reacted from his shock, we deemed it best to amputate the right leg, as it was already dead and emitting a foul odor. I amputated at the junction of the upper and middle thirds at 10 A.M., assisted by Drs. Dayton and Thompson. Owing to extreme shock I amputated only the right leg, the left not being as yet a source of infection. The same restoratives were continued until the next morning, August 5th, when, the patient having more fully rallied from his shock, I amputated the left leg at about the same point as the right.

The patient reacted nicely from the second operation, and the left leg healed by primary union without further trouble. The right leg having been amputated while the patient was enduring considerable shock, the circulation was not so quickly reëstablished, and it healed partly by primary union and a small part at one side by granulation, without any sloughing, however. The temperature gradually returned to normal by the end of ten days, and the man's condition, although still one of considerable debility, was very satisfactory.

On August 25th the temperature began to rise, and continued to rise steadily, with slight abatement in the morning, until on the evening of August 30th it reached 104.8° This was not explainable from the condition of the stumps, which were healed, except a small point of granulation on the left, nor were there any chills. However, the diagnostic symptoms of typhoid fever soon appeared, including the rose-spots, foul-smelling diarrhea, and meteorism. The fever pursued a typical but rather severe course, owing, perhaps, to the already debilitated state of the patient.

On September 14th considerable ulceration was discovered on the right stump, which had not continued to heal since the onset of the fever, and the next day a bedsore appeared over the sacrum. Neither of these annoying symptoms continued to extend very seriously, as they were combated by strict cleanliness and turning the patient.

On September 18th all control of the sphincters was lost, and for the next nine days all evacuations from both bladder and bowels were involuntary and took place unconsciously. At the same time a low delirium set in, accompanied by a peculiar manner of holding the lower jaw to one side and with continual oscillations of it. The temperature, however, began to fall on the next day, September 19th, and on the morning of the 25th had declined to 99.5°, but in the afternoon, without apparent cause, the pulse ran up again to 136, the face became cyanotic, the breathing shallow, and it was thought dissolution was setting in. No antipyretics had at any time been used other than repeated sponge-baths. Indeed, the treatment had by this time become almost altogether supporting, and consisted of liquid nourishment, strychnin, strophanthus, and brandy. The brandy was during this attack of extreme depression increased to its highest limit during his illness, one tablespoonful being given every hour. The patient rallied, but the temperature rose to 104° the next day, September 26th, after which it fell continuously, reaching a morning normal on September 30th, and being normal on the evening of October 2d, from which time convalescence was gradual but uninterrupted.

The patient soon presented the bright-eyed appearance and developed the tremendous appetite, with rapid gain of flesh, so frequently observed in convalescents from typhoid fever. The slight bedsore and the ulceration on the right stump healed rapidly, and the patient was discharged from the hospital in full health, with two good stumps and full use of both knee-joints. Being young and active, he was confident of being able to get about well on artificial limbs.

HYPERPLASTIC HARDENING OF THE STERNO-CLEIDO-MASTOID.

BY A. L. BENEDICT, A.M., M.D.,
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ON January 18, 1893, I superintended the delivery of a primigravida, aged twenty-four years, who was under the care of a student. There was a right sacro-anterior presentation. The length of the first stage could not be ascertained. The second stage began half an hour after midnight, and continued two hours. At half-past one the child passed meconium. The right buttock came down in front of the left, pointing posteriorly and to the right, then rotating rapidly, as soon as both buttocks were born, so that the occiput pointed to the right and anteriorly. The right foot was hooked out of the vulva first, the other following. The right arm, which was extended upward beside the head, was brought down, and then, hooking my finger into the child's mouth, the head was easily delivered. Credè's method was used to deliver the placenta, the third stage occupying twenty minutes. Several contractions occurred during the third stage which were not recognized by the patient as pains. A careful examination of the child revealed nothing abnormal, nor did anything develop during the ten days that mother and child were under observation. However, my personal visits were few.

On February 10th, the child's grandmother noticed a hard lump in the neck, and the baby was brought to my office. Almost the whole of the left sterno-cleido-mastoid was converted into a hard rhomboidal mass. So hard had the muscle become that it was impossible to distinguish between it and the mastoid process. The sternal and clavicular heads of the muscle felt like the forks of a stick. Running the hand as far as possible underneath the muscle, it was found that the middle and upper portions, posteriorly, were not quite so much indurated as the remainder. No wry-neck nor other distortion was noticed. Applications of tincture of iodin were ordered, supplemented by poultices. A week later no change was evident, except that on careful examination the child was seen to hold its head somewhat flexed to the left, the face being turned to the right. There was, however, good muscular control and comparatively free movement. The child fretted almost constantly, but showed no local tenderness.

Dr. Justin Herold, of New York, published an article on this subject in the issue of the *International Medical Magazine* for February, 1893, which appeared at the time when I was interested in this case. Quoting from Henoch, and speaking from his personal experience, Dr. Herold describes this comparatively rare condition as occurring usually in children born after difficult labor. The case which Dr. Herold uses as a text was that of a child born by the breech and violently pulled by a midwife. My case, though occurring in a child born breech foremost, can scarcely be attributed to violence inflicted during labor. In fact, I remember impressing upon the student the fact that, though technically an abnormal labor, it was practically a perfectly normal and easy process. Henoch found the induration of the sterno-cleido-mastoid to occur, usually, six weeks after birth, never earlier than four weeks. In Dr. Herold's case, the swelling was first noticed three weeks after birth, though he did not see it till a week later. The flexion and rotation of the head noticed by me are considered characteristic by Henoch, though not constant.

As the case did not fall within the line of work in which I am particularly interested, I asked Dr. Roswell Park to prescribe. He advised the addition of glycerin to the iodin, as recommended by Dr. Rutherford, of Chicago. The child was under observation for several weeks without showing much improvement, and it was then lost sight of.

According to Henoch, the hardening of the muscle is usually limited to one or several small areas; in my case the whole muscle was involved, certainly all the anterior portion. The ordinary symptoms of inflammation may or may not be present; here the interstitial change was of a chronic and mild type.

Speaking of the case to several acquaintances, the most varied opinions were expressed. One gentleman with a large general practice considered the condition a common one. Another of longer, and, perhaps, greater experience, thought it extremely rare. As to the pathology, there seems to be an agreement that an extravasation of leukocytes occurs, going on to organization, and, probably, terminating with resorption of the hyperplastic tissue. With regard to treatment, iodin in one form or another is generally advised, though one physician of long experience ridiculed the idea of instituting any treatment, on the ground that the condition would disappear spontaneously in a few months. It seems obvious that the condition, if not absolutely rare, is rarely observed, and for this reason rather than from any especial personal interest it has seemed best to report this case.

MEDICAL PROGRESS.

Ten Cases of Cerebral Surgery.—BURNS (*New York Medical Journal*, vol. lx, No. 26, p. 801) has reported ten cases of various kinds requiring trephining. The first occurred in a man, thirty-five years old, who presented symptoms of an abscess of the brain in the frontal lobe of the right side, with pressure downward and backward on the motor tracts of the internal capsule, following a blow with a hammer upon the right side of the forehead. A neurologist who was consulted expressed the opinion that an extra-dural hemorrhage existed, causing pressure on the motor area. An operation was undertaken in conformity with this view, but no extravasation was found. The opening made was, however, extended toward a scar upon the forehead, with the result of finding a black necrotic-looking spot upon the dura. Puncture with the graduated aspirator at this point yielded six ounces of laudable pus. Incision and irrigation brought away much brain-detritus, shreds, etc. Death took place after seven hours, the patient having been *in extremis* when placed on the table. Upon post-mortem examination, a slight rarefying osteitis of the skull was found beneath the scar, and an encapsulated abscess confined entirely to the frontal lobe of the right side.

The second case occurred in a man who had been injured by a fall from a height of some fifty feet. A depressed, impacted fracture of the frontal bone, including a portion of its orbital plate and ridge, was found. On removing a disc of bone with the trephine, clotted blood was observed evenly spread over the dura. The surrounding parts being septic, the blood was not disturbed. The patient did well for about a week, when symptoms of cerebral disturbance returned. The wound was reopened and the layer of clotted blood found to be absorbed. On introducing a curved director into the brain pus immediately escaped. The opening was enlarged by means of dressing-forceps, the wound washed out with Thiersch's solution, and a drainage-tube introduced. Recovery was speedy and uncomplicated.

The third case occurred in a boy, ten years old, who was struck by a locomotive and suffered a compound comminuted, depressed fracture of the skull over the motor region. Trephining was performed, the depression elevated, and the splintered fragments removed. Recovery was uninterrupted and uncomplicated.

The fourth case occurred in a man who was struck on the head with a stick and suffered a compound comminuted, depressed fracture of one side of the vault of the cranium. The trephine was applied in two places at the top and bottom of the fractured area, and the extradural space was found filled with recently clotted blood. This was broken down and washed away and further hemorrhage controlled. The depressions were raised, drainage was provided for, and an antiseptic dressing applied. Recovery was speedy and uninterrupted.

The fifth case occurred in a young man who shot himself in the left temple, the bullet entering the brain for some distance, traversing the entire middle cerebral region obliquely. A trephine was applied, but the bullet could not be found. The fragments of bone, with some clotted blood, were removed and drainage established. Recovery was speedy and perfect.

The sixth case occurred in a girl, nineteen years old, who was struck by a falling piece of thick plate-glass, a portion of which penetrated the skull and was broken off flush with the outer table. Trephining was performed and the glass with difficulty removed. Recovery was speedy and uninterrupted.

The seventh case occurred in a young man who suffered a circular depressed fracture of the skull, including the inner table over the motor area, from being thrown against the sharp projecting end of an iron railing. Trephining was performed, and was followed by speedy and uncomplicated recovery.

The eighth case occurred in a man, forty years old, who for four years had been having frequent attacks of epilepsy, following a fracture of the skull seven years before. Trephining was performed at the patient's request and resulted in improvement of sight and hearing, but the attacks returned after four weeks.

The ninth case occurred in a man who was thought to have a gumma of the brain in the right motor region which had resisted medicinal treatment. In the hope of affording relief trephining was undertaken, but beyond uniform bulging of the brain and excessive edema of the membranes, nothing was found indicative of a tumor of the cortical area. Death took place on the following day, and upon post-mortem examination the brain was found uniformly soft and the meningeal vessels hyperemic. The ventricles and their connecting passages contained no fluid. The pia mater covering the pons and medulla was thickened to a bony consistence, and the vertebral and basilar arteries presented atheromatous plates.

The tenth case occurred in a man, twenty-seven years old, who was thrown from a moving car, striking the back of the skull. A diagnosis of fracture of the base of the skull, with laceration of the middle cerebral artery and intradural hemorrhage, was made and confirmed by immediate trephining. Clots were evacuated, the hemorrhage controlled, and an extensive laceration of the brain in the temporo-sphenoidal lobe of the right side was found. The wound was washed thoroughly and dressed antiseptically, but the patient died during the night. Upon post-mortem examination, in addition to the laceration found at the operation, a similar condition was present at the base corresponding to the sella turcica of the sphenoid bone. The crista galli of the ethmoid was fractured and torn away and found clinging to the membrane. There was a fracture of the base on the right side, beginning at the superior border of the occipital bone and extending downward over the petrous portion of the temporal, then irregularly through the sphenoid and ethmoid bones.

Rapidly Spreading Gangrene of the Extremities—Amputation—Recovery.—Williams (*British Medical Journal*, No. 1779, p. 249) has reported the case of a man, fifty-three years of age, of intemperate habits, who, while under the influence of alcohol, fell and dislocated his shoulder (not for the first time). The condition of the shoulder was not discovered until the following morning, when the dislocation was reduced by manipulation. Within a few hours the hand was cold, shrivelled, and dark in color, and deprived entirely of feeling. Three days later this condition was still more pronounced, and at intervals up the forearm and arm, and on the pectoral muscle, and in the axilla were large purplish-black spots covered with bullæ containing black fluid. Pulsation could be felt high up in the axilla, but not in the radial or brachial artery. The patient was at first unwilling to have the arm removed, but the condition of general gangrene becoming so marked in the course of a few days he became even anxious to be rid of the offensive odor and pain in the shoulder. The arm was removed at the level of the insertion of the deltoid. Uncomplicated recovery ensued. The artery was firmly plugged from the axilla down to the hand. The veins were uninjured.

In a second case, a man, twenty-six years old, had his thigh crushed between buffers. There was little external evidence of severe injury, but in the course of two or three days the leg had lost all sense of feeling, had become black, cold, and covered with huge bullæ, and exhaled a most offensive odor. The general condition also became more desperate. Amputation was performed in the upper third of the thigh, and was followed by speedy recovery. It was found that the popliteal artery and vein were ruptured just below Hunter's canal.

Reference is further made to a case in which, first, the superficial femoral artery was tied for popliteal aneurysm, and the external iliac for aneurysm of the femoral on the same side, and subsequently the femoral of the other leg was tied for popliteal aneurysm. The patient made an excellent recovery, remaining in good health, and returning to his work.

Pulmonary Tuberculosis Complicated by Epithelioma of the Larynx.—At a recent meeting of the British Laryngological and Rhinological Association, JAKINS (*Medical Press and Circular*, No. 2907, p. 87) reported the case of a school-teacher, thirty-three years old, who for four months had occasional cough and weakness of the voice. For seven years there had occurred periodically attacks of slight difficulty in swallowing, which had gradually been growing more marked. On examination of the pharynx a large cauliflower-growth was detected, which extended to, but not beyond, the posterior pillars of the fauces. The root of the tongue was swollen, but free from involvement. The arytenoids were edematous, more especially the left. The left vocal band was ulcerated. On microscopic examination the growth was found to be an epithelioma. The case progressed unfavorably, and terminated fatally. On post-mortem examination the right lung was found riddled with tubercles.

Tracheotomy for the Relief of the Pulmonary Accidents of General Anesthesia.—PONCET (*Lyon Médical*, 1895, No. 2, p. 35) maintains that the performance of tracheotomy in case of apparent death in the course of anesthesia may be followed by a resumption of respiration and restoration of the heart-beat. He considers the measure so important as to believe that it should be resorted to in every instance in which other means have failed. The possibility of accidents in the course of general anesthesia should always insure the presence of the necessary instruments for the performance of tracheotomy. If the trachea is opened, respiration may still be practised, while the direct insufflation through a canula may be attempted and rhythmic traction of the tongue is in nowise interfered with. The operation is also justifiable in other asphyctic conditions, as in prolonged syncope, from whatever cause, in apparent death by electricity or in poisoning by toxic drugs, etc.

Induced Labor in a Case of Previous Cesarean Section.—SCHLAEPFER (*Centralblatt für Gynäkologie*, 1895, No. 6, p. 154) has reported the case of a woman, twenty-seven years old, who was delivered by Cesarean section of a dead child at the termination of her first pregnancy. Conceiving again a year-and-a-half later, and desirous of having a child, and presenting a simple flat pelvis of the first degree, it was concluded to induce premature labor during the ninth month. This was with some difficulty effected after the introduction of a bougie, and subsequently of a water-bag, the child being delivered after version. The infant was asphyxiated, but was resuscitated after some manipulation. The placenta came away after expression; the uterus contracted well and presented a depression upon its anterior surface, supposedly corresponding with the cicatrix of the previous section. This depression had not before been appreciable, nor was it so subsequently.

THERAPEUTIC NOTES.

The Treatment of Diphtheria with the Antitoxin.—VIERORDT (*Deutsche medicinische Wochenschrift*, 1895, No. 10, p. 169) has reported the results of the employment of the antitoxin in the treatment of seventy-five cases of diphtheria. In sixty-one characteristic bacilli were found; in at least two of the remainder the clinical diagnosis was unequivocal; in the remainder doubtful. There were further excluded from the statistics eight cases that were in a hopeless condition when they came under observation. In addition to the antitoxin the treatment included cleansing of the mouth, gargles, and sprays of solutions of borax, lime-water, and sodium chlorid, sometimes with the addition of turpentine. Among the fifty-five cases there were eight deaths (14.6 per cent.). The mortality in previous periods, excluding hopeless cases, had been, in 1894, 37 per cent.; 1893, 50 per cent.; 1892, 50 per cent.; 1891, 67 per cent.; 1890, 60 per cent.; 1889, 41 per cent. No doubt, in these figures are included some cases that would have been excluded by bacteriologic examination. Including all cases, the mortality ranged as follows: Antitoxin period, 1894, 25 per cent.; before the antitoxin period, 1894, 41 per cent.; 1893, 52 per cent.; 1892, 50 per cent.; 1891, 67 per cent.; 1890, 60 per cent.; 1889, 41 per cent.

Bleaching of the Tongue from Hydrogen Dioxid.—SIR BENJAMIN WARD RICHARDSON (*Asclepiad*, second quarter, 1894–'95, p. 163) directs attention to a milky whiteness of the tongue that appears in the course of administration of hydrogen dioxid. It was most marked in cases of typhoid fever in which two-dram doses of ten-volume strength were diluted and were given every four hours for several days, and is considered a good sign that the medicine is effective. The appearance recedes in six or seven days after the medicine is withdrawn, leaving a moist and clean surface.

Thyroid Extract for Psoriasis.—At a recent meeting of the Clinical Society of London WILSON (*British Medical Journal*, No. 1781, p. 365) presented a woman who had suffered from psoriasis, which gradually became general. She was treated with thyroid extract, fifteen grains three times a day, and in less than three months was quite well, the skin being clear and supple and hair having commenced to grow. The treatment was attended with no depression.

A Cheap and Efficient Disinfectant for the Sick-room consists according to MELLIÈRE (Paris correspondence *Lancet*, No. 3728, p. 277) of zinc sulphate, 1000 g., sulphuric acid from 5 to 10 c.c., and essence of mirbane, 2 c.c., coloring-matter (*e. g.*, indigo-blue) 15 c. g. About 5 g. of this mixture are placed in the bed-pan before its use. On contact with urine or liquid stools deodorization occurs, and the liquid excreta are at once sterilized.

The Treatment of Chronic Gastric Ulcer with Papain.—RANKIN (*Lancet*, No. 3728, p. 333) recommends the employment of papain in the treatment of ulcer of the stomach, and reports a series of cases in which the remedy was administered with advantage. With papain he usually combined iron and cannabis indica, generally in pill-form and with varying quantities of each of the ingredients.

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SATURDAY, APRIL 6, 1895.

SOME NEW IDEAS ON THE ETIOLOGY OF MALIGNANT TUMORS.

AFTER three or four years of vigorous work upon the question of the protozoan parasitic nature of malignant tumors it cannot be said that any real advance has been made toward the solution of this weighty pathologic problem in this particular direction. A critical summary of the now voluminous literature on this subject gives one little real satisfaction, and the impression is that something serious is at fault when so many widely different objects are described as the long-looked-for parasite. It seems that the trouble largely lies in the imperfection of the methods of research at present employed. The reliance upon mere microscopic observation, without the aid of culture-experiments and inoculation-experiments, gives the student of this subject an inadequate foundation for valuable investigation. Indirectly, however, all of the work along this line has been valuable, as it has materially widened our knowledge of the development and minute structure of tumors, and because it has indelibly impressed upon us the strong arguments for the parasitic nature of carcinoma and sarcoma.

In the unsettled state of the problems surrounding the sporozoan theory of tumor-etiology it is a relief to turn to another and very suggestive line of investigation, and while this new work has little in the way of statistical value, it offers much encouragement to the weary investigators in this field, as it inaugurates an almost unexplored line of research in pathologic mycology, and one in which the methods of bacteriology may be brought into play. These studies upon the pathology of certain forms of tumors tend to direct our attention from the puzzling sporozoan organisms to a class of fungi long known to botanists, that is, to the yeast-plants.

The first contribution to which we shall direct attention comes from BUSSE (*Centralbl. für Bakteriologie und Parasitenkunde*, Bd. xvi, Nos. 4 and 5, 1894), who records the successful cultivation and inoculation of certain parasitic cell-inclusions. In teased preparations from a sub-periosteal mass on the tibia of a woman this investigator found an abundance of hyaline, very refractive, round or oval bodies, varying in size from the dimensions of a small nucleus to those of a human liver-cell. The tumor had all the histologic characteristics of a giant-celled sarcoma. The bodies in the fresh preparations were not affected by strong mineral acids, hence were not calcareous; and they became more distinctly visible and showed a double contour when treated with solution of caustic soda. Professor GRAWITZ believed the bodies to be of a sporozoan nature, and in stained preparations of sections of the hardened tissue they certainly did resemble in every way the so-called "protozoan" cell-inclusions of recent investigators, especially those described in Paget's disease by DARIER and WICKHAM.

A piece of the tumor-tissue was implanted in the bone-marrow of the tibia of a rabbit, and preceding this inoculation the circulation of the leg was impeded by a tight ligature worn for twenty-four hours. In three days the affected leg was gangrenous, and on amputation it was found that the whole bone-marrow of the tibia was filled with the bodies noted in the implanted tissue, and which had multiplied to an enormous extent. Other inoculation-experiments confirmed this first observation.

After considerable trouble BUSSE succeeded in isolating and growing in pure culture the bodies found in the original tumor-tissue. The organisms grew well on agar and gelatin, as a white layer, and did not liquefy the gelatin. The most luxuriant growth was obtained on potato. Microscopic preparations from these cultures disclosed the bodies of the original preparations, although the double contour of the cell-wall had disappeared. Inoculation-experiments with the pure cultures were successful, and in the bodies of the affected animals the double contour of the inclusions reappeared. Further biologic studies of these presumably sporozoan organisms disclosed the fact that they grew in acid media and induced fermentation in glucose-solutions, with the production of carbon dioxid; these characteristics, together with a more careful study of the morphologic and cultural peculiarities of these bodies, led to the suspicion that they belonged to the yeast-fungi. Professor LOEFFLER, to whom BUSSE'S work was submitted, confirmed the idea of the yeast-like nature of the organisms, and pronounced them as in all probability a pathogenic variety of the budding fungi.

Closely following these interesting observations by BUSSE comes a communication from SANFELICE (*Centralbl. für Bakteriologie u. Parasitenkunde*, Bd. xvii, No. 4, 1895) upon a pathogenic variety of the budding fungus. The organisms employed in this case wereisolated in pure culture from the fermenting juices of certain fruits. These yeast-cells were grown in the ordinary culture-media, and, after a study of their morphologic and physiologic peculiarities, they were employed in inoculation-experiments. Twenty or thirty days after an inoculation of a pure culture of this variety of yeast into the peritoneal cavity of guinea-pigs the animals died. On autopsy the inguinal and axillary glands were found to be enlarged; the spleen was enlarged, and presented here and there on its surface curious yellowish patches. This was also the case in the kidneys and liver; while the great omentum was filled with yellowish-white nodules of considerable size. The mesenteric glands showed considerable enlargement, and the lungs were enlarged and in a state of hepatization. In microscopic preparations from these organs, in both freshly teased material and in sections of the hardened tissue, yeast-cells could be identified, and with their double contour, highly refractive substance, and less refractive central body, they bore very striking resemblance to the objects that have been described and figured as sporozoan tumor-parasites.

For the sake of comparison, SANFELICE made a study of certain tumors obtained from cattle and horses, and of an epithelioma from a man, and he was forcibly impressed by the striking morphologic resemblance between the yeast-cells in the affected tissues of the guinea-pig and the so-called coccidia in the other tumors. In fact, he says that only one marked difference was noticed in comparing the various sections, and this was that the inclusions were much more numerous in the tumors in the inoculated guinea-pig's tissues than in the other tumors. Comparing his studies with those of BUSSE'S, SANFELICE comes to the conclusion that there is a very close resemblance, if not identity, between the organisms studied.

Approached from two distinct and independent standpoints, both of these studies are of much significance, and, together with other recent work upon the pathogenesis of the yeast-plant, it now begins to look as if this very common and well-known organism were destined to play an important part in pathology. It would indeed be startling if, in the near future, these preliminary investigations were confirmed, and the suspicions of these workers that yeast-cells were related to the cell-inclusions in malignant tumors were shown to be well founded.

CATHETERIZATION OF THE MALE URETERS.

THE technique of catheterizing the female ureters has been rendered so simple that at the present time the operation is resorted to almost every day as an ordinary method of diagnosis in obscure cases. The examination of specimens of the urine taken directly from the two ureters has been of so much help, not only in determining the diagnosis, but also in influencing the treatment of diseases of the upper urinary passages in women, that both physicians and surgeons alike have hoped that the time would come when the catheterization of the ureters in the male would be rendered simple enough to be regarded as a practicable procedure.

Certainly, it must be confessed that the first attempts were by no means reassuring. BRENNER, in Vienna, in 1888, modified the NITZE-LEITER cystoscope by placing along the under surface of the shaft of the posterior cystoscope a small canula, by means of which the fluid in the bladder could be changed without removing the instrument. Through this canula he afterward tried to catheterize the ureters. He succeeded once in the female, but could not accomplish his object in the male. FENWICK and HARRISON, both English surgeons, have also worked with this instrument as modified by BRENNER, but only to reject it as unpractical.

In 1893 DR. JAMES BROWN, of Baltimore, published (*Johns Hopkins Hospital Bulletin*) a preliminary report concerning the successful catheterization of the ureters in the male in June of that year, and recently he has published an article in which he claims to be able with but little difficulty to catheterize the ureters in either the male or the female. By strict attention to certain details, with which he deals fully, it would seem that the male ureters can be easily catheterized, sometimes even without the aid of an anesthetic. Brown used Brenner's modified Nitze-Leiter cystoscope, and, contrary to the experience of others, finds it quite adequate for the purpose. The bladder is first examined over its entire surface with the anterior cystoscope; after this has been done the instrument is withdrawn, and the Brenner cystoscope, with a stylet in place, is passed into the bladder, and search is made for the ureteral orifice. When this has been located the stylet is removed and the catheter inserted so as almost to reach the inner opening of the canula; the ureteral orifice is again found and the catheter passed into it. Faulty presentation of the ureteral orifice does not necessarily militate much against the catheterization, for the difficulty can generally be overcome by slightly curving the tip of the catheter. Three cases were reported by Brown as examples of the diagnostic value of the catheterization of the male ureter. Current numbers of the German weeklies contain reports from Nitze and also from Caspar with regard to successful catheterization of the male ureter, but these surgeons do not seem to know of Brown's publications.

It would seem almost superfluous to insist upon the grave responsibility that every surgeon encounters when he has to decide whether or not to remove a diseased kidney, and if he is in possession of some sure method for determining as to the manner in which the kidney on the other side is performing its functions, he will most certainly be able to arrive at a more satisfactory conclusion.

A nephrectomy for suppurative or tuberculous disease would never be justifiable if the process were bilateral; and a surgeon would never decide upon the removal of a kidney the seat of a new-growth if he knew that the patient possessed only one kidney, or if he had definite proof that the second kidney was inadequate to perform the functions of both.

In the discussion of Dr. Brown's paper, Professor Welch referred to the importance of the practical application of the procedure. He mentioned an instance in which a movable kidney had been taken away, and the specimen sent to his laboratory for examination. The kidney was large and succulent, the cortex was thick, and the markings distinct. The whole picture reminded him so forcibly of the findings at an autopsy that he had made a few days before, on a patient who had only one kidney, that Dr. Welch, to the horror of the surgeon, suggested that the specimen that had been removed might possibly be the only kidney which the patient possessed.

The patient in question lived over ten days without passing any urine, and finally died with symptoms of uremia. At the autopsy no second kidney could be found. The surgeon promptly reported the case in full, and deplored the impossibility at that time of deciding before operation upon the presence and condition of a second kidney.

EDITORIAL COMMENTS.

A New Method of Operating for the Cure of Superficial Varicose Veins.—A varicose condition of the veins of the legs often gives rise to a most troublesome and unyielding state of affairs. It is most common in persons of lax fiber who are compelled to be upon their feet a good deal, and women suffer more largely than men. Pregnancy is often an exciting cause. Beyond the annoyance and distress inherent in the condition, together with the interference with locomotion which it entails, are the dangers of ulceration and rupture. A measure of relief may be afforded by the use of support and compression in various forms, but these are not unattended with petty difficulties, and hold out no promise of cure. Numerous radical procedures have been proposed for relief from the condition, and have met with varying degrees of success. That which most commends itself in these days of aseptic surgery as the most rational and the most simple consists in the excision of the affected vessels, in part at least. It has been customary to ligate the divided veins, but experience has shown that the ligature is not entirely free from danger. With these facts in mind Stoker (*Dublin Journal of Medical Science*, March, 1895, p. 209) substitutes compression for the ligature after excision of a portion of the affected vein. He has applied his method to the treatment of varicose veins of the legs and varicocele when the operation can be performed high up, close to the external abdominal ring, and when the tissues of the groin afforded good counter-pressure to a compress and a well-applied spica. The following are the various stages of the operation: The patient is kept in bed for two or three days, the bowels are well cleared out, and the skin of the parts to be operated on is rendered aseptic by (*a*) thoroughly scrubbing with soap and water; (*b*) washing with ether; (*c*) keeping for twenty-four hours in a dressing of 1 in 40 solution of carbolic acid, covered with mackintosh, and changing two or three times. An anesthetic is not employed, unless the patient insists on it. The pain is insignificant, and the probable struggling under anesthesia would interfere with the delicacy of the method, would cause bleeding at the time, and, if subsequent vomiting takes place, might produce a bloodclot under the dressing. If anesthesia is decided upon, it should be general, and an Esmarch bandage should not be applied. If any doubt exists as to the position of the veins, the patient is made to stand up, and a slight scratch with a sharp knife is made over the distended vessels at the points selected for operation. At each place where it may be thought necessary to divide the veins an incision about half an inch long should be made in the vertical axis of the limb, the superficial fascia divided with an oculist's scissors, the vessel lifted from its bed, a quarter of an inch cut from its length, and gentle pressure applied with a sponge. When this procedure has been repeated at all necessary points the parts should be thoroughly irrigated with a warm sublimate-solution, flat compresses of sterilized gauze applied to each incision, a dressing placed over them, and the limb bandaged from the toes to above the seat of operation. The patient should kept in bed and not allowed to rise from the horizontal position for a week. If the dressings are then removed, a superficial linear ulcer will be found at the seat of each incision. These can be treated by wet dressings for a few days, when they will be found to have healed. As we have said, the method commends itself for its simplicity, its rationalness, and its comparative freedom from risk. It need scarcely be added that the result will depend upon the perfection of asepsis in the performance of the operation.

The Patellar Tendon-reflexes During Pregnancy.—That a condition of general hyper-excitability is present during pregnancy is a matter of common observation. The fact is accepted without question, but the explanation, if it could be given, would prove most interesting. It is not unreasonable to suppose that it is to be looked for in the action upon the nerve-cells of the brain and spinal cord of certain substances either normally present in the blood but now in excess, or altogether absent under ordinary conditions. Few systematic observations have heretofore been made in this connection. An interesting contribution to the subject has recently been made by NEUMANN (*Centralblatt für Gynäkologie*, 1895, No. 8, p. 201), who reports the results of a series of observations upon the knee-jerk during pregnancy. His examinations included five-hundred women, and many were made during pregnancy, in the course of labor, and during the puerperium. In a large number he found the knee-jerk exaggerated. The impression was gained that the increase was progressive with the advance of pregnancy, little or no change being observed in the earlier months. The alteration was usually first observed in the second half of gravidity. It appeared that age, the number of previous pregnancies, and the position and presentation of the fetus had no influence upon the degree of increase, while the individuality as shown in the psychic condition seemed to have such an influence. In some cases no change was observed throughout. The knee-jerk was invariably increased in parturient women in whom the pains were active. Sometimes the reaction was attended with unpleasant sensations. Often in the cases in which no change in the reflex had been observed during pregnancy, such an increase appeared during labor. In a few cases in which the labor was complicated with premature rupture of the membranes and feeble pains there was no increase in the reflex. The exaggeration was progressive toward the end of labor, and reached its maximum during the period of expulsion. The return to normal ensued gradually during the puerperal period. The peculiarity is believed to be associated with the act of parturition, and was proportionate to the activity of the pains. It was further frequently found that during the progress of labor other reflexes were correspondingly increased. The conclusion is reached that during pregnancy, and particularly during labor, the central nervous system is in a condition of heightened irritability. A convenient means of studying the knee-jerk in a recumbent individual was found to consist in having the thigh and knee slightly flexed, and the thigh rotated outward so as to lie on its outer aspect.

A study of the urine at different periods of pregnancy, particularly with regard to its convulsivant action upon lower animals, as compared with its action at other times, would be a natural complement to these interesting observations on the reflexes.

Orchitis Due to Typhoid-bacilli.—It is often an exceedingly difficult matter to distinguish the complications of disease from intercurrent affections. This embarrassment is growing less with the progress of bacteriologic research and the evidence afforded by accumulating experience. We have, for instance, learned that many of the complications of typhoid fever are due to the action of the causative agent of the primary disease—a form of metastasis, one might say. In this list of complications may now be placed the orchitis occasionally seen in the course of typhoid fever. GASSER (*Archives de Médecine et de Pharmacie Militaires*, 1895, No. 3, p. 228) has reported the case of a soldier, twenty-three years old, in which during convalescence from an attack of typhoid fever the left testicle became swollen and painful. Mechanical support was provided and mercurial inunctions were practised. No evidence of suppuration appeared, but with antiseptic precautions the organ was punctured with the needle of a sterilized syringe and a drop of fluid removed and inoculated upon suitable culture-media. Ultimately improvement set in and recovery ensued, the testicle remaining indurated. In the inoculated culture-media colonies of typhoid-bacilli developed. The influences in operation that favor either the development of or escape from these complications are probably as varied and as uncertain as those that predispose to or protect from the original infection. That the explanation is wanting but makes the fact the more interesting.

Diphtheria in New York City.—The introduction of modern scientific methods into the administration of the health-affairs of the city of New York has already borne fruit demonstrable by statistical evidence. A report by the Bureau of Contagious Diseases of the Health Department of that city shows that thus far during the present year there have been reported 2207 cases of diphtheria, with 467 deaths (21.16 per cent.), while during the corresponding period of last year there were reported 2058 cases, with 675 deaths (32.75 per cent.).

Little difference in the virulence of the disease has been observed, but one must be struck by the lower mortality, relatively and absolutely, from the disease during the present year. The larger number of cases reported in the first part of the current year may be attributed to greater precision in diagnosis, in conjunction with the labors of the Department of Pathology and Bacteriology. To what extent the mortality has been influenced by the use of the antitoxin is as yet beyond determination. New York City and its Health Department are to be congratulated and commended on this favorable turn in its health-affairs.

Disgrace enough, it is, even if the bill does not pass, to have a bill reported favorably by the Assembly Committee on Public Health of New York State, authorizing the use of the " Double-chlorid-of-gold treatment for the cure of liquor, opium, morphin, cocain, and tobacco diseases," etc.

SELECTION.

ON THE SIGNIFICANCE OF OBJECTS WITH HOLES.

This paper treats of what appears to be a worldwide superstition, belonging to all races and to all time, in which holes are credited with healing and protective powers.

The superstition exists among us at present in the shape of lucky money and lucky stones, but can be traced back to Neolithic times, in the great holed stones and dolmens which are to be found in Great Britain and Ireland, as well as in many countries of Europe, in North Africa, India, Syria, Circassia, and also in America. The chief of British holed stones, the Men-an-tol, is still known locally as the Crickstone, and through it people creep for the cure of rheumatism.

In Siberia wooden figures bored with holes are carried about as a cure for various diseases, according to the part in which the hole is bored ; and figures of great age have been found in Peru and among the Eskimo, which seem from the holes bored in them to have been intended for the same purpose. Engraved shells also similarly bored have been found in ancient Chaldea and in the American mounds.

The same superstition appears to be traceable in the trephined skulls of Neolithic times found in many countries, and from which amulets have been cut, probably for the cure of epilepsy, the disease for which the operation was undoubtedly undertaken, since it was thus employed up to quite recent times ; and the bones of the human skull were always recommended, either grated as a potion, or worn as an amulet, for the cure of epileptic disease.

Miss Buckland believes the healing property thus attached to holes to be of necromantic origin. She regards the hole as the symbol of the underworld, the abode of the Creator in some cosmogonies, and always of the spirits of dead ancestors. Hence, they are summoned by the medicine-men to assist them in their healing ceremonies and magic incantations ; and thus the hole, through which they are drawn by sorcery, became to the savage the source of healing, and in this form, modified by time, it has descended to us.

The underworld, also, was the reputed source of wealth : hence, the symbolical hole in money caused it to be regarded as lucky money, and this probably explains the use of ring money among the ancients. These symbolical holes are also found in ceremonial weapons in West Africa and in the South Sea Islands, as they were also probably in ancient Egypt and other countries; the idea suggested being that the bearer of the weapon assumed the power of sending offenders to hades. Holes exist also in magic wands, and in staves, especially in the South Sea Islands, where the holes certainly represent deceased ancestors.

The magic wands and the South Sea staves or idols resemble so strongly the holed implements of reindeer horn found in caves of Paleolithic times that Miss Buckland believes these staves to have been used by the medicine-men of that remote period as symbols of the world of spirits over which they assumed control, and that thus we can trace the superstitions connected with holes to the earliest of the human race.—*Abstract of a paper by Miss Buckland, from the Report of the British Association for the Advancement of Science*, 1894, p. 790.

REVIEWS.

The Senile Heart: Its Symptoms, Sequelæ, and Treatment. By George William Balfour, M.D. (St. And.), LL.D. (Ed.), F.R.C.P.E., F.R.S.E. New York and London: Macmillan & Co., 1894.

A clear presentation of an obscure subject by one of rare experience, who combines lucidity of thought with elegance of expression, the book before us ranks as a most valuable contribution to medical literature. The main thought running through its pages is that regression as well as progression is an inevitable phase of development, and that the terminal stages of the organs and tissues of animals—man included—are to be explained only by reference to the successive changes that take place naturally throughout life. When regressive changes appear prematurely we have disease.

The essential lesion of the senile heart is a weakened myocardium, rarely without dilatation of the cavities. This dilatation is caused by over-strain, occasionally by actual over-exercise, but far more frequently it is slowly induced by causes that are partly physical and partly nervous in their origin. In addition, the senile heart may suffer from disease, either disease of age or past disease which has left its impress upon the development of the organ. Most of the disease superadded to the senile heart may be traced to such causes as alcoholism, the abuse of tobacco or of tea and coffee. Angina pectoris is a symptom of the senile heart. It may occur in very young persons. It is a result, as a rule, of cardiac ischemia, which may be due to any of several causes. Gout must be considered as among the causes of the senile heart; glycosuria and cirrhosis of the kidneys are concomitants. Exercise and diet are paramount in maintaining the integrity of a healthy organism, and, properly employed, they are of the greatest value in restoring health when it has been lost.

Balfour insists upon the importance of judiciously employed exercise in strengthening a weak heart. As digestion is slower than normal in this condition, there must be not less than five hours between meals. This allows of three meals in the day with a sufficient interval after the last meal to permit its digestion before the patient goes to bed. No solid food of any kind is to be taken between meals. All invalids should have their most important meal in the middle of the day. All those with weak hearts should have their meals as dry as possible; water, however, preferably hot water, should be sipped at intervals throughout the day. This is a better stimulant than alcohol. Digitalis is the best drug, because it improves the nutrition of the heart. Ten minims of the tincture and half a fluidounce of the infusion may be given every twelve hours. One granule of Nativelle's crystallized digitalin (one-quarter of a milligram) may be given daily at bedtime. Strophanthus or strophanthin may be used at times as a substitute. Strychnin and arsenic are also to be thought of as nutrients. Whatever cardiant or tonic be chosen the conjoint use of the nitrites is highly beneficial. From time to time cholagogue cathartics and alkaline laxatives may be used. In sudden failure of cardiac action aromatic spirit of ammonia and nitro-glycerin are to be employed. Opium is useful as an antispasmodic and hypnotic. Should a bromid be indicated, ammonium bromid should be employed.

Notes on the Newer Remedies, Their Therapeutic Applications and Modes of Administration. By David Cerna, M.D., Ph.D., Demonstrator of Physiology and Lecturer on the History of Medicine in the Medical Department of the University of Texas. Second edition. Enlarged and revised. Philadelphia: W. B. Saunders, 1895.

If one wishes to get a conception of the stupendous activity of the nineteenth-century alchemist, the synthetic chemist, he should read the admirable book of Dr. Cerna, a second edition of which has just appeared. "Truly," one is forced to exclaim, "the philosopher's stone has been found." But its puissance is far greater than the medieval alchemist in his wildest flights of fancy dreamed, for it converts base, inert matter into pain-assuaging, health-giving substances, which surely are more precious than gold.

The profession owes Dr. Cerna a debt of gratitude for his zeal in culling from the enormous mass of literature on the newer remedies the "salient points" concerning their properties and uses. There is no doubt that many of the new discoveries will become cherished additions to our therapeutic armamentarium. It is a striking commentary on what has been said, that a very large number of the drugs noted in the book can be designated by a structural chemic formula.

We notice that Dr. Cerna gives the dose of pelletierin tannate as 23 grains, which seems rather large. On comparing authorities we were surprised to find a marked discrepancy in the dosage of this drug. In the United States Dispensatory the dose is set down as from ½ to ¾ of a grain, although it is stated that as much as 8 grains have been given; Wood gives the dose as 4.6 grains, and records a case presenting toxic symptoms after the administration of 5 grains. In Gould's *Illustrated Dictionary* the dose is given as from ½ to 1 grain; Brunton gives it as from ½ to ¾ of a grain; Potter gives it as from 5 to 20 grains, and Hare as from 3 to 5 grains. There should be more uniformity in the dosage of such an active substance as pelletierin.

Every practising physician is at times confronted with cases that stubbornly resist treatment—gladly would he resort to the use of the newer drugs if he could obtain the information necessary for their intelligent employment. The possession of Dr. Cerna's book will spare him the labor of reading the literature; by the aid of the therapeutic index he can see at a glance what pharmacology offers for the treatment of the disease. We hope sincerely that Dr. Cerna will continue the publication of his *Notes on the Newer Remedies.*

Manual of Chemistry. A Guide to Lectures and Laboratory Work for Beginners in Chemistry. A Text-book for Students of Pharmacy and Medicine. By W. Simon, Ph.D., M.D., Professor of Chemistry and Toxicology, College of Physicians and Surgeons, Baltimore. New (fifth) edition. In one octavo volume of 502 pages, with 44 engravings and 8 colored plates. Philadelphia: Lea Brothers & Co., 1895

The rapid issue of sucessive editions of this book is sufficient evidence that it meets the requirements of students and teachers. In the present edition the usual emendations and additions necessitated by the progress of science have been made. The special features, the colored plates of tests, which have made the manual always so noticeable among text-books on chemistry, are retained and improved. It is a satisfaction that the work has been so well done. Author and printer deserve credit, but we feel that the advisability of such methods of illustration is still an open question. A new plate illustrating the color-reactions of some of the important benzene-derivatives is added to this edition. The new spelling is not adopted for the reason, as assigned in the preface, that the Pharmacopeia has not used it. We regret that even such appropriate terms as glycerol and phenol are not regularly used instead of glycerin and carbolic acid. Many sets of questions are scattered through the work as foot-notes, so that the manual has applicability to the purpose of a question-compend. The fashion of furnishing questions in text-books is extending, and, while the protest may do little good, we must again express our disapproval of such methods.

The work has been brought up to date, is clear and accurate in description, and certainly constitutes an excellent compendium of chemistry. It is well printed, and much care and expense have been bestowed on the colored plates. The illustrations of apparatus are few and poor. In view of the importance of optical properties of organic compounds, text-books of chemistry should contain some illustrated explanations of the theories and application of polarized light.

The Urine in Health and Disease, and Urinary Analysis Physiologically and Pathologically Considered. By D. Campbell Black, M.D., L.R.C.S. Edin., F.F.P. and S., Glas., Professor of Physiology in Anderson's College Medical School, Physician to the Glasgow Public Dispensary (Department for Kidney and Urinary Diseases), etc. London: Baillière, Tindall & Cox, 1895.

The study of the urine has made rapid strides in recent years, and confines itself no longer to the simple determination of the presence or absence of albumin, sugar, and bile, but takes cognizance of the existence of a large number of complex chemic compounds excreted with the urine in disease. Acetone, diacetic acid, peptone, globulin, and aromatic bodies are some of the substances that are now objects of research, and it is fair to assume that before many years have passed the toxic compounds in the urine in morbid conditions will be drawn within the limits of our investigations.

Dr. Black's book contains in an acceptable form all that is important in the analysis of the urine, both as regards the familiar constituents and the rarer ones just mentioned. In an introductory chapter the anatomy and functions of the kidney are concisely discussed. Then follows a description of the normal elements found in the urine, together with the methods of their detection and separation. The third part is devoted to the pathologic constituents. From the vast number of tests for albumin and sugar the author has wisely selected only those that are most reliable. The trichloracetic-acid test is properly placed among those of doubtful value. A brief reference to Ehrlich's diazo-reaction, given by the urine in typhoid fever and, more rarely, in a few other conditions, might have been added to this chapter. The use of the word "tube" for tube-cast can hardly be considered correct. The concluding pages comprise chapters on the analysis of urinary calculi and on the detection of medicaments and accidental substances in the urine.

The importance of urine-analysis is so great that every physician should possess a reliable text-book to which he can constantly refer for information. For this purpose we can recommend the manual of Dr. Black as one of the best published.

Practical Manual of Diseases of Women and Uterine Therapeutics. For Students and Practitioners. By H. Macnaughton-Jones, M.D., M.Ch., M.A.O. (Hon. Caus.). Sixth edition, revised and enlarged. Pp. 766. London: Baillière, Tindall & Cox, 1894.

The sixth edition of this well-known work is issued at the expiration of the first decade of its existence, and is practically a new book so thoroughly has it been revised and in large part rewritten. The text as now presented is the accepted teaching of the day, and embraces new chapters on uterine reflexes, sutures, and ligatures, the surgical treatment of uterine fibromata, affections of the Fallopian tubes, tubal pregnancy, and ovarian affections. In addition, the sections upon diseases of the appendages have been rewritten, while to make room for the new material the chapters on diseases of the mammary glands have been expunged. The articles on tubal gestation and the pathology of ovarian tumors are exceptionally good, and are the work of the celebrated English pathologist, Bland Sutton. In fact, the pathologic, as also the operative, portions of gynecology have been admirably prepared, and the book may well be said to be a compendium that includes all the practical points of the subject. The illustrations are profuse and well adapted to the text, but the indexing, which is especially required in a book of this character, is miserably deficient. In an appendix are contained notes of gynecologic progress that has been made since the preparation of the main body of the work. Among the practical subjects here treated are electro-therapeutics, Baer's method of supravaginal hysterectomy without ligature of the cervix, aseptic dilatation of the cervix by tents, microbes, intestinal obstruction after abdominal hysterectomy, Vulliet's plastic operation for obstinate stenosis of the cervix, ovariotomy during pregnancy, obesity in its relation to menstruation and conception, indications for the operation of oöphorectomy, cardiac degeneration caused by intra-abdominal tumor, and parasitic coccidia in carcinoma.

A Synopsis of the Practice of Medicine. By William Blair Stewart, A.M., M.D., Lecturer on Therapeutics in the Medico-Chirurgical College of Philadelphia, etc. 8vo., pp. 419 and index. New York: E. B. Treat, 1894.

In the preface to this book we are told that it has been prepared for the use of the "busy practitioner and student," and if, as Pope says, "half our knowledge we we must snatch, not take," then the publication of syllabi and synopses, so comprehensive in their scope and necessarily so cursory in their presentation, is justified, and within limits their usefulness cannot be denied.

In the preparation of his synopsis the author has doubtless "turned over half a library," but in the selection of material and in the method of presenting it he has not ventured out of the beaten path. He remarks that "the classification of diseases is open to severe crtiticism," and that he thinks it best to adopt the "regular arrangement." A systematic, modern arrangement, however, even though tentative, is more satisfactory than one which is neither modern nor systematic.

The sections on treatment are conspicuously full and explicit, and the importance of hygienic and prophylactic measures in combating disease is duly emphasized. The work, on the whole, is likely to prove a more helpful guide for the student of medicine than a suggestive outline for the practiser, though the latter will find it a handy volume, for it contains much practical information.

The printing is well done, and the book is neatly bound.

Travaux d'Électrothérapie Gynécologique. Archives Semestrielles d'Électrothérapie Gynécologique; Fondées et Publiées, par le Dr. G. Apostoli, Vice-President of the French Society of Electrotherapy, etc. Pp. 720. Paris: Société d'Editions Scientifiques, 1894.

This is the initial volume of what is intended to be, when finished, a more or less complete library of the world's literature of gynecologic electrotherapy. Under the editorship of the eminent Dr. Apostoli, to whose efforts may be ascribed the prominence attained by electricity in the treatment of the various pathologic conditions of women, the work bids fair to attain a degree of perfection that would otherwise be almost impossible. It will contain all of the leading publications that have appeared from time to time in all languages. Distinguished writers from England, the United States, Canada, Germany, Austria, Italy, and Russia have contributed the papers contained in the present volume, and these will be of interest to those especially interested in the so-called conservative gynecology. Necessarily the work, while complete in itself, presents but one side, and that the less important phase, of gynecologic treatment, and must largely serve as a more or less accurate *résumé* of a method of treatment now rapidly becoming antiquated.

MATERIA MEDICA AND THERAPEUTICS FOR PHYSICIANS AND STUDENTS. By JOHN B. BIDDLE, M.D., Late Professor of Materia Medica and Therapeutics in Jefferson Medical College, Philadelphia. Thirteenth edition, revised, rearranged, and enlarged, with special reference to Therapeutics, Toxicology, and Physiological Action of Medicines, and containing all the Preparations and Remedies described in the U. S. Pharmacopeia of 1890, to which the Work has been made to Conform. By CLEMENT BIDDLE, M.D., Medical Corps, U. S. Navy. With numerous illustrations. Philadelphia: P. Blakiston, Son & Co., 1895.

BIDDLE'S *Materia Medica* has always enjoyed popularity with the author's pupils and with others who prefer practical results of experience to theory and laboratory-experiment. In the thirteenth edition, which is before us, an effort has been made to add to the author's clinical foundation the results of modern scientific investigation and a brief summary of the physiologic action of drugs, while the botanic and pharmaceutic information which give the book its distinctive characteristics has been retained, though in somewhat abridged form. The book is one that may usefully find place with others upon the shelves of the physician's library and to which the student may refer in the course of his studies as a supplement to the particular text-book recommended by his college.

LABORATORY-GUIDE FOR THE BACTERIOLOGIST. By LANGDON FROTHINGHAM, M.D.V., Assistant in Bacteriology and Veterinary Science, Sheffield Scientific School, Yale University. Illustrated. Philadelphia: W. B. Saunders, 1895.

THIS laboratory-guide is not intended to take the place of text-books on the subject of bacteriology. It has arranged briefly those materials requisite for laboratory-work, devoting quite a little space to laboratory-technique. This is followed by short chapters which give special stains, special methods of staining, including both bacteria and microscopic sections of tissue. While the book is not so complete as it should have been to cover the subject entirely, yet it contains the best accepted methods, presented briefly, yet not at the sacrifice of clearness. The colored plates, though few, are especially fine. The book is neatly printed, and cheaply, yet substantially, bound.

L'HYSTÉRECTOMIE VAGINALE CONTRE LE CANCER DE L'UTÉRUS ET LES AFFECTIONS NON-CANCÉREUSES. Par L. GUSTAVE RICHELOT, Professeur Agrégé a la Faculté de Médecine de Paris, etc. Pp. 446. Paris: Octave Doin, 1894.

IN the author's own words, this is a pure and simple *exposé* of his practice for the five years from 1889 to 1893. It comprehends 274 cases of vaginal hysterectomy, of which 44 were for carcinoma uteri, and 230 for non-carcinomatous affections, with a mortality of but 5 per cent., which is certainly a creditable showing. A commendable feature of the book is the report *in extenso* of each fatal case; too often are the failures either barely mentioned or entirely ignored. The analysis of the operations for non-carcinomatous affections includes 61 for pelvic suppurations (hematosalpinx, dermoid cyst, tuberculous salpingitis), with 5 deaths; 43 for uterine fibroids, with 1 death; 42 for parenchymatous salpingo-ovaritis, with 2 deaths; 21 for complicated retroversion, and 20 for secondary vaginal hysterectomy (after ovarian castration), without a death; 17 for pelvic neuralgias, with 2 deaths; 16 for slight lesions, and 5 for prolapsus, without a death, and 5 for non-suppurating hematosalpinx, with 1 death. A full record of each case is given at the close of the book.

SANDOW ON PHYSICAL TRAINING. A Study in the Perfect Type of the Human Form. Compiled and edited under Mr. Sandow's direction. By G. MERCER ADAM. New York: J. Selwin Tait & Sons, 1894.

THIS book is wrongly entitled. It should have been *Sandow on Sandow*, instead of *Sandow on Physical Training*. It is a badly padded book, with impossible illustrations (except the photographs), and designed as an advertisement rather than as a serious treatise on the subject of gymnastics.

There is very little in the book that is absolutely original. That Sandow himself is a marvel of strength no one will deny; yet his muscular ability can easily be accounted for by the fact that he has taken physical exercise from boyhood, and has been very devoted to it for many years. He is not a symmetrical man, because he is "bow-legged." Sandow's system, as well as the many so-called systems of "physical culture," do not differ, from a scientific standpoint, from that of Professor Joseph Ling, who is the real originator of all forms of physical exercise based upon scientific knowledge.

CORRESPONDENCE.

SCARLET FEVER AND MEASLES.

To the Editor of THE MEDICAL NEWS,

SIR: I have been interested in several communications that have appeared in your journal regarding scarlet fever and measles in the same individual at the same time. I trust my communication does not come too late to be of interest. In brief, my cases are as follows:

During the last of January, 1893, a little girl, eight years of age, ran through a typical course of measles, with initial coryza, bronchitis, fever, rash on the fourth day, typical defervescence, and desquamation. On February 13th the rash appeared on two other children in the family, and on the 14th on the fourth child. On the 17th of February, as the rash was fading from the body of the little girl six years old, there was a marked increase in fever, and the appearance of a diffuse rash, a typical scarlatinal eruption. On the 18th the throat was very sore, and covered with a dirty, grayish exudate, and there was a strawberry-tongue. On the 19th a boy, four years old, on whom there were still slight remnants of the rash of measles, came down with scarlet fever, and on the same day the two-year old boy also. In these three patients both rashes were present at the same time. If my diagnosis of scarlet fever be questioned, it is amply confirmed by the typical course run by the disease in all three of these patients, with characteristic desquamation; by the suppurating middle ear in the four-year old boy; by the occurrence of a scarlatinal sore-throat in the mother and in the nursing baby, with elevation of temperature but no rash. If still further confirmation is necessary, it is found in the fact that the girl, eight years of age, who first had the measles, and who had fully recovered from that disease and had been up and about the house for two weeks, was taken on the 23d of February with vomiting, a temperature of 104°, sore-throat, etc., and developed a typical scarlatinal rash, and to clinch the diagnosis she, unfortunately, had an acute nephritis as a complication, and only recovered after ten weeks' illness.

I could not find the source of the secondary infection. It may have been myself, though I could not directly trace the case from which I had carried the disease to this family.

A few weeks later I was called to see a little girl whom Dr. C. W. Earle had treated for measles, and whom he had discharged as convalescent. The rash had just disappeared. On the seventh day after the appearance of the rash of measles, and when the child was to all appearances well, she was taken with vomiting, fever, and sore-throat. I was called in and treated her for a typical light case of scarlet fever.

The interesting question in both of these cases, aside from the fact of great interest that the two diseases were present at one and the same time, is, Were we doctors responsible for bringing the disease to these patients? If so, how can we avoid such unfortunate accidents?

Respectfully yours,

James B. Herrick.

751 Warren Avenue, Chicago.

A CASE OF DOUBLE VAGINA AND UTERUS.

To the Editor of The Medical News,

Sir: The following case, discovered in my practice, I wish to report, that it may go on record. The fact that such anatomic conditions are exceedingly rare and unusually interesting is my only excuse for making the report.

Mrs. T., married six years, aged twenty-seven years, sterile, white, applied for treatment for metrorrhagia. Digital examination revealed nothing unusual, except a rather small uterus and shallow vagina, although she stated that she had been losing blood for some time, and was still doing so. On ocular examination with the speculum no hemorrhage of any kind was detected. Further examination, however, revealed a divided vagina, presenting a membrane extending perpendicularly from vestibule to fourchet, and becoming a part of them, this membrane extending back to and dividing the mouth of the uterus in two. A slight hemorrhage exuded from the left os, which indicated that I had before evidently been investigating the right-hand vagina. The uterine sound passed freely into each uterus for a depth of one-and-three-quarters inches, when it met with resistance.

Curretting the left uterus relieved the patient, and she now enjoys good health. She, her husband, and other physicians had detected nothing unusual, and all were much surprised when, in a consultation, the facts were demonstrated. Bimanual examination threw no further light on the subject. The tubes and ovaries seemed normal. The uterus was somewhat shortened and enlarged at the fundus.

Very respectfully yours,

Samuel D. Swope.

Marion, Ky.

DEATH FROM "BABY-DROPS."

A Suggestion.

To the Editor of The Medical News,

Sir: In similar cases to that described in The Medical News of March 9, 1895, p. 278, should it not be the rule to wash out the stomach thoroughly and repeatedly, although the patient may not have been seen until two hours or more have passed since the taking of the drug? Osler and others have shown that morphin is excreted by the gastric mucosa, and that lavage is a very important means of treatment, each one of the repeated washings for many hours after the administration of morphin showing the presence of the alkaloid. In view of the rapid action of potassium permanganate on morphin, it is probable that future experience will show that a small quantity of that drug in very dilute solution should be deposited in the stomach after each lavage. It may not be amiss to state that, as a rule, infants may be washed out with great ease by tubes such are used in adults.

Respectfully,

Francis L. Haynes.

929 S. Main Street, Los Angeles, Cal.

SOME OF THE VAGARIES OF EPIDEMIC INFLUENZA.

To the Editor of The Medical News,

Sir: I know of no better preface to this letter than the following quotation from Bartholomew Parr:

"I apprehend from the present state of our knowledge [of influenza] that we can hardly venture to say what it is not, still less to affirm with any probability what it is." The same author speaks of erysipelas being of common occurrence in the epidemic of 1775. I have seen only two such cases. The first was in a man, eighty years of age, who had the disease in a chronic form, and was insane therefrom. When first seen his nose was swollen to three times its natural size. I thought he had received a blow, although he declared he had not. By the next day the disease had extended to the eyelids, where it stopped. The man remained insane, but the erysipelas yielded to the usual remedies for influenza: calomel and soda. The other case was that of a young lady whose erysipelatous attack was exactly similar to the one described. In this malady I have seen a difference of nearly twelve degrees in temperature in persons seemingly affected alike. I have seen the pulse so irregular that had it been ten years ago I would have thought these persons had hardly a day to live, yet they were going around and attending to their business as though nothing was the matter. I have seen a great many cases in which inflammation of the aural cavities was the only local lesion. I have had several influenza-patients with chronic inflammation and enlargement of the testicles. One of these was recently castrated for the relief of enlarged prostate, when the removed glands were found to be not much more than large pus-sacs. Many symptoms have been described during the present epidemic of influenza, such as every form of eruption and inflammation of the mucous membrane lining every cavity of the body, but I have never seen orchitis spoken of as a part of this disease.

Very sincerely yours,
Edward Anderson.

Rockville, Md.

NEWS ITEMS.

Medical Legislation in Montana.—A new Medical Practice Act, to go into effect July 1, 1895, has just been passed by the Montana Legislature and received the approval of the Governor on March 13th. The act provides for the appointment by the Governor of a Board of Seven Medical Examiners constituted of graduates of accredited colleges of medicine. Applicants for a license to practise, graduating after July 1, 1898, must have attended four courses of lectures of at least six months each. The board has the privilege both to refuse to grant and to revoke a certificate for unprofessional, dishonorable, or immoral conduct.

Killed by Foot-ball.—George Bahen, the half-back of the Georgetown football team, who suffered a fracture of the cervical vertebræ in a "scrimmage" in a game of foot-ball last Thanksgiving, died on March 26th at the Emergency Hospital, in Washington, D. C., at the age of nineteen years. From the time of the accident the unfortunate young man was paralyzed. An operation on the vertebral column was undertaken, but without permanent avail. In the language of the newspapers "the accident was one natural to the brutal lengths of recklessness to which foot-ball playing has gone in recent years."

Philadelphia Pathological Society.—At the semi-annual conversational meeting of the Philadelphia Pathological Society, to be held on Thursday, April 25, 1895, at 8.15 P.M., in the hall of the College of Physicians, northeast corner of Thirteenth and Locust Streets, Dr. George Dock, of the University of Michigan, will deliver an address entitled "Trichomonas as a Parasite of Man." Members of the profession are cordially invited to be present.

Louis Florentin Calmeil, a distinguished French alienist, died on March 11th, at Fontenay-Sous-Bois, at the age of ninety-seven years.

Books and Pamphlets Received.

The Principles of Surgery and Surgical Pathology. General Rules Governing Operations and the Application of Dressings. By Dr. Hermann Tillmans. Translated from the Third German Edition, by John Rogers, M.D., and Benjamin Tilton, M.D. Edited by Lewis A. Stimson, M.D. With four hundred and forty-one illustrations. New York: D. Appleton & Co., 1894.

A Case of Chronic Peritonitis, with Intestinal and Abdominal Fistulæ—Enterorrhaphy—Recovery. By Frederick Holme Wiggin, M.D. Reprinted from the Medical Record, 1894.

A Monograph on Diseases of the Breast, their Pathology and Treatment, with Special Reference to Cancer. By W. Roger Williams, F.R.C.S. With seventy-six figures. London; John Bale & Sons, 1894.

Celiotomy for Bilateral Pyosalpinx, followed Four Days Later by Appendicitis—Operation—Recovery. A Case of Bilateral Ovarian Sarcoma. By Frederick Holme Wiggin, M.D. Reprinted from the New York Medical Journal, 1894.

Bulletin of the Harvard Medical Alumni Association, No. 6, Catalogue. Boston: Published by the Association, 1894.

Bulletin of the Harvard Medical Alumni Association, No. 7. Report of the Fourth Annual Meeting, held in Boston, June 26, 1894. Boston: Published by the Association, 1894.

The Present Condition of Legislation for the Prevention of Blindness. By Lucien Howe, A.M., M.D. Reprinted from the Bulletin of the American Academy of Medicine, No. 23, 1894.

Higher Medical Education, the True Interest of the Public and of the Profession. By William Pepper, M.D., LL.D. Philadelphia: J. B. Lippincott Co., 1894.

A Contribution to the Study of Modern Amputation. By W. L. Estes, A.M., M.D. Reprinted from the Medical Record, 1894.

Statistique et Observations de Chirurgie Hospitalière. Par le Dr. Polaillon. Paris: Octave Doin, Éditeur, 1894.

Schwund und Regeneration des elastischen Gewebes der Haut unte verschiedenen pathologischen Verhältnissen. I. Von Kurt Passarge. II. Von Dr. Rud. Krösing. Hamburg und Leipzig: Leopold Voss, 1894.

Obstetric Surgery. By Egbert H. Grandin, M.D., and George W. Jarman, M.D. With eighty-five illustrations of the text and fifteen photographic plates. Philadelphia: The F. A. Davis Co., Publishers. London: F. J. Rebman, 1894.

The Pathology of Granular Conjunctivitis. By H. V. Würdemann, M.D. Reprinted from the Transactions of the Wisconsin State Medical Society, 1894.

The Status of Skiascopy. By H. V. Würdemann, M.D. Reprinted from the Journal of the American Medical Association, 1894.

Intra-Tympanic Massage and Vapors in the Treatment of Chronic Aural Catarrh. By H. V. Würdemann, M.D. Reprinted from the Journal of the American Medical Association, 1894.

The Use of Trichloracetic Acid. By Dr. Stanislaus v. Stein. Translated by H. V. Würdemann, M.D. Reprinted from the Journal of the American Medical Association, 1894.

Two Typical Cases of Congenital Anomalies of the Cornea. With Three Illustrations. By H. V. Würdemann, M.D. Reprinted from the Annals of Ophthalmology and Otology, Vol. III, No. 4, 1894.

Ein Fall von temporaler Hemianopsie mit Ausgang in Genesung, gefolgt von rechter lateraler Hemianopsie und Ophthalmoplegia externa mit theilweiser Genesung. Von H. V. Würdemann, M.D., und J. S. Barnes, M.D. Separat-Abdruck aus dem Archiv für Augenheilkunde. New York: H. Knapp. Berlin: C. Schweigger.

Report of the Surgeon-General, U. S. Navy, Chief of the Bureau of Medicine and Surgery, to the Secretary of the Navy, 1894. Washington: Government Printing Office, 1894.

Sulla Patogenesi della Febbre. Pel Prof. G. B. Ughetti. Estrat to dalla Riforma Medica, 1894.

Pain in Eye Diseases: its Types and Relief. By R. J. Phillips, M.D. Reprinted from the Philadelphia Polyclinic, 1894.

A Digest of Four Hundred Consecutive Railway Cases. By Howard J. Williams, M.D. Reprinted from the Railway Surgeon, 1894.

Transactions of the State Medical Society of Wisconsin, for the Year 1894. Constitution and By-Laws, and List of Members. Vol. XXVIII. Madison, Wis.: Tracy, Gibbes & Co., 1894.

Thirteenth Annual Report of the Ladies' Benevolent Union of Pueblo, Colo., for the Year Ending February, 1894. Sketch Job Rooms, 1894.

Directory of Trained Nurses. Containing a Complete List of Names and Addresses of Trained Nurses. Philadelphia: J. Albert Cornell, 1894.

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ORIGINAL ARTICLES.

CLINICAL LESSONS.

Pseudocyesis—Spurious Pregnancy.

BY S. WEIR MITCHELL, M.D.,
OF PHILADELPHIA;
PHYSICIAN TO THE ORTHOPEDIC HOSPITAL AND INFIRMARY FOR NERVOUS DISEASES.

I HAD hoped to show you to-day a case which is of unusual interest and of the utmost rarity. The patient will, I think, come hither sooner or later, because she is convinced I am wrong as to her state, and because Professor Hirst, whom I shall ask to see her, will agree with her and disagree with me. Moreover, she is hysterical and inclined to exhibit herself. I shall not wait for her return, as it may never happen, but take her case as a text or an excuse for dwelling on a subject of interest to both the obstetrician and the neurologist.

I find it somewhat hard to fit her case and others like it with a label. If I call it simulation of pregnancy, that would be near to a satisfactory name; it would not fully satisfy me. As usual, I should have to qualify and explain it. Perhaps it were well to leave the matter until I have stated some illustrative examples. Before doing so I shall give an outline, so to speak, a delineation of the interesting condition for which I wish to claim your attention.

A woman, young, or else it may be at or past the climacteric, eagerly desires a child, or is horribly afraid of becoming pregnant. The menses become slight in amount, irregular, and at last cease or not. Meanwhile the abdomen and breasts enlarge owing to rapid taking on of fat, and this is far less visible elsewhere. There comes with this excess of fat the most profound conviction of the fact of pregnancy. By and by the child is felt, the physician takes it for granted, and this goes on until the great diagnostician, Time, corrects the delusion. Then the fat disappears with remarkable speed and the reign of this singular simulation is at an end. When I describe one or two of these cases you will, I fancy, agree with me that the subject is worth discussing.

Perhaps the cases may be more common than I think they are. As a consultant I might rarely hear of them. The general physician and the obstetrician are more liable to encounter them, and yet they must be uncommon. Some years ago I asked Dr. Duer if he recalled the two or three cases of this nature sent to him by me. He said yes, and that he had also met with one or two others. Shortly after this I was consulted by a lady in regard to a woman of thirty years of age, a nurse in whom she was interested. This person had been married some three years to a very old man possessed of a considerable estate. He died, leaving his wife her legal share and the rest to distant cousins, unless the wife had a child. For two months before he died the woman, who was very anemic, ceased to menstruate. She became sure that she was pregnant, and thereupon took on flesh at a rate and in a way which seemed to justify her belief. Her breasts and abdomen were the chief seats of this overgrowth. The menses did not return, her pallor increased; the child was felt, and every preparation made for delivery. At the eighth month a physician made an examination and assured her of the absence of pregnancy. A second medical opinion confirmed the first, and the tenth month found her of immense size and still positive as to her condition. At the twelfth month her menstrual flow returned, and she became sure it was the early signal of labor. When it passed over she became convinced of her error, and at once dropped weight at the rate of half a pound a day despite every effort to limit the rate of this remarkable loss. At the end of two months she had parted with fifty pounds and was on the whole less anemic. At this stage I was consulted by letter, as the woman had become exceedingly hysterical. This briefly stated case, which occurred many years ago, is a fair illustration of my thesis.

Another instance I saw when in general practice. A lady who had several children and suffered much in her pregnancies, passed five years without becoming impregnated. Then she missed a period, and had as usual vomiting. She made some wild efforts to end her supposed pregnancy, and failing, accepted her fate. The menses returned at the ninth month, and were presumed to mean labor. Meanwhile she vomited up to the eighth month and ate little. Nevertheless she took on fat so as to make the abdomen and breasts immense and to excite unusual attention.

No physician examined her until the supposed labor began, when, of course, the truth came out. She was pleased not to have another child, and in her case, as in all the others known to me, the fat lessened as soon as the mind was satisfied as to the non-existence of pregnancy. As I now recall the facts, this woman was not more than two months in getting rid of the excess of adipose tissue.

Dr. Hirst tells me he has met with cases of women taking on fat with cessation of the menses, and in which there was also a steady belief in the existence of pregnancy. He has not so followed up these cases as to know if in them the fat fell away with speed when once the patient was assured that no child existed within her. My much regretted friend Goodell promised me the detailed account of at least two examples having precisely the sequence of symptoms I have described.

These women are in no sense of unsound mind, nor is their illusion to be classified with the delusory and obstinate belief as to their pregnancy held by some of the insane. These latter persons may be virgins or not. Sometimes the idea has arisen in connection with uterine symptoms, or else is the outcome of some exposure to the creation of pregnancy and alarm at a possible but non-existent pregnancy. Many of these people hold to the notion for years. Dr. Hirst recalls to me the story of Dupuytren, who, when consulted for such a case of eighteen years' duration, advised the woman to swallow a private tutor. It is said to have cured the case, which I much doubt. I knew of one instance in which a physician etherized such a case, and assured the woman he had taken away a dead child. This answered for a week, and then she confided to him her regret that he had not taken away the other, as now she knew they were twins.

The delusion of pregnancy in the insane is neither created nor kept up of need by excess of flesh or failure of menstruation. No such food for fancy is needed. It defies the contradictions of time and the popular knowledge of physiology.

The illusion of the patients I describe is inevitably destroyed by time and adverse circumstance.

I can find no mention anywhere in literature of cases like those I have described. Perhaps I may have overlooked them or they might be found on more careful search. Yet, after inquiry of men with the large experience of Goodell and Duer, I am forced to believe them exceptionally rare.

A woman who is emotionally eager to have or not to have a child: one with the unsatisfied craving for motherhood, or one who has been fearfully tormented in her pregnancies—these, I think, are the classes of women liable to this complex group of symptoms. More rarely it is a woman long childless, who somewhat early and suddenly ceases to flow, and, as is not rare at the climacteric, puts on flesh very rapidly. The illusion of pregnancy is in such females a flattering one.

The other cases are the more interesting. The woman has naturally and too constantly dwelt, with disappointed hope or abiding fear, on the loss or delay of the periodic bleeding. Then she becomes more gladly sure or more alarmed, as the case may be, as she gains flesh and especially abdominal fat. Is this gain in flesh an accident of nutrition which combines, with lessened or absent menstruation, to give and sustain her growing illusion as to pregnancy? Women, as I long ago remarked in my book on *Rest Treatment*, are easier to fatten than men; also in them gain or loss of adipose tissue is more common than in the other sex, and less significant as to health or of pathologic disaster. The point as to which I remain in doubt is as to whether belief in the presence of the pregnant condition in any way influences the really singular gain in fat seen in certain of these cases. Whether it is, as I said, coincident and assistant of belief, or whether it follows that mental state, I do not know. Some women thus deluded are, when once assured of pregnancy, likely to be careful to exercise less than usual, and acquire, like some pregnant women, excessive appetites. Also it is quite sure that once they are convinced of their delusion they lose flesh very speedily, and this, too, may be in a measure due to a return to normal habits. Still there remains for us the unsolved problem of how much the mind has to do with the gain and loss of weight. The first of these cases I ever saw was brought to my knowledge in a singular way: A woman had given birth to two female children. Some years passed, and her desire for a boy was ungratified. Then she missed her flow once, and had thrice after this, as always took place with her when pregnant, a very small but regular loss. At the second month morning vomiting came on as usual with her. Meanwhile she became very fat, and as the growth was largely, in fact excessively, abdominal, she became easily sure of her condition. She was not my patient, but her husband consulted me as to his own morning sickness, which came on with the first occurrence of this sign in his wife, as had been the case twice before in her former pregnancies. I advised him to leave home, and this proved effectual. I learned later that the woman continued to gain flesh and be sick every morning until the seventh month. Then menstruation returned, an examination was made, and when sure that there was no possibility of her being pregnant she began to lose flesh, and within a few months regained her usual size.

The sympathetic vomiting of the husband is an interesting subject to which I called attention some years ago in my lectures on nervous maladies.

Dr. John W. Coles, a retired surgeon of the United States Navy, died at Philadelphia on April 6th, at the age of fifty-seven years.

ACCENTUATION OF THE PULMONARY SECOND SOUND AN IMPORTANT SIGN IN THE DIAGNOSIS OF PERICARDITIS.[1]

BY ALDRED S. WARTHIN, PH.D., M.D.,
DEMONSTRATOR OF CLINICAL MEDICINE IN THE UNIVERSITY OF MICHIGAN, ANN ARBOR.

DURING the past two years the attention of Dr. Dock and myself has been frequently called to the importance of a certain physical sign in the diagnosis of pericarditis that has not received due consideration. Having met with a large number of puzzling heart-cases, in which the chief physical sign was a marked accentuation of the pulmonary second sound, either with or without the coexistence of peculiar murmurs at the base or apex of the heart, and with the entire absence of any other condition in heart or lungs to account for this accentuation, we have taken especial pains to note its occurrence and to seek some explanation. Fortunately, we were able to follow some of these cases through the development of certain phases that left no doubt as to the diagnosis; and, from the clinical experience thus gained we have been able to widen to a valuable degree our diagnostic horizon. A brief citation of a few of the cases presenting this sign may serve to show its importance and to emphasize its significance in the diagnosis of pericarditis, especially in the first stages of the disease.

CASE I.—Mr. A. G. W., a student, aged twenty-four years, came to the hospital on March 24, 1894, complaining of palpitation, a feeling of constriction in the chest, and shortness of breath when attempting to sing. In addition to these symptoms he had also a slight, dry cough. Three weeks before he had had slight rheumatic pains in the knees. The examination of the lungs was entirely negative. The apex-beat was of moderate strength, and was located in the fifth intercostal space, just outside the nipple-line. A faint presystolic thrill could be felt just inside of the apex-beat. The heart-dulness began at the fourth rib, extended a little to the left of the left parasternal line, and to the right as far as the median line. On auscultation a slightly rough blowing murmur, presystolic in time, was heard best just inside of the apex-beat, where the thrill was felt. The first sound at the apex was strongly accentuated, and with it there was a soft blowing murmur of slight intensity. These murmurs were constant, and had all the characteristics of valvular murmurs. The first sound at the base of the heart was very clear and strong. No murmurs could be heard at the base. The second sound was everywhere unusually strong, but in the left second interspace its character was such as to attract immediate attention. Strongly accentuated, it gave a peculiarly clangorous shock. The heart-rhythm was slightly irregular, and the radial pulse was 80, slightly irregular, small, quick, and of low tension. A diagnosis of mitral stenosis and insufficiency was made. The next day the systolic murmur could not be heard; the other signs were as before. Comment was made at this time upon the rough character of the presystolic murmur and upon the accentuation of the pulmonary second sound, and the correctness of the diagnosis was questioned.

On March 26th the man was again examined. The physical signs were unchanged; the murmur was not altered in character by pressure with the stethoscope. On the next day the patient was again seen. Everywhere, especially at the base, there were heard two loud friction-sounds, forming with the accentuated second sound a marked canter-rhythm, one murmur occupying the systole and replacing the first sound; the second, of rougher quality, coming after the second sound. These murmurs displayed friction fremitus; were superficial; not transmitted beyond the heart-area; were increased by pressure; affected by respiration; influenced by change of position, and were not constant. The patient complained of dyspnea, dry cough, and precordial pain. At the time of examination his temperature was 102°. On March 28th he was seen in his room. There was no change, either in the symptoms or in the physical signs. On the following day he complained much of pain in the heart-region, but no change in the signs could be discovered. To relieve the pain a mustard-plaster was applied to the heart-area. The patient let this remain until a large blister had formed; but in the twenty-four hours following its application a large effusion took place, as shown by the following signs: dulness extended, in the shape of a large triangle, from the apex at the second rib in the left sternal line down to the sixth rib, two finger-breadths to the outside of the left nipple-line, and across the sternum to the fifth intercostal space a finger's breadth to the right of the sternum. The apex-beat was in the fifth intercostal space, in the nipple-line. A small triangle of dulness, over which vocal fremitus and breath-sounds were absent, extended two finger-breadths beyond the apex-beat. The heart-sounds were distant and very faint, with the exception of the pulmonary second, which still retained its accentuated character. Friction-sounds were absent, except at the base of the heart.

From March 31st to April 7th the man's condition rapidly improved under the treatment, which consisted of the use of salicylic acid internally and of the ice-bag locally. The area of dulness decreased; friction-sounds disappeared; the heart-sounds became strong and clear. The accentuation of the second sound in the left second interspace still remained, and was the most striking sign. Repeated thorough examinations of the lungs were entirely negative. The patient remained under observation until he had made a complete recovery. The heart-dulness became normal; all murmurs and friction-sounds disappeared; the accentuation of the pulmonary sound remained for some time, but finally the sound became normal.

CASE II.—Mr. A. C., a student, aged twenty-two years, was seen in November, 1893. He complained of sore-throat, pain in the joints, headache, and palpitation. The tonsils were enlarged and inflamed, showing numerous small points of white exudate. The temperature ranged from 102° to 104°. The physical examination of all the organs was entirely negative, with the exception of the heart. All of the sounds were increased, but especially was the pulmonary second sound accentuated, and strikingly ringing and metallic in quality. No murmurs or friction could be heard after careful examination. The heart-action was not greatly increased, but was irregular in rhythm. There was no enlargement of the heart-dulness. Because of the accentuation of the pulmonary sound without other signs, special attention was paid to the heart-examination. At one visit slight friction was heard in the pulmonary area, but it disappeared, and did not return. The patient recovered without other incident; but when last seen the accentuated character of the pulmonary sound was still marked.

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During the year following the man had two other attacks resembling this one, but was seen by other physicians, who treated him for "febricula." In the latter part of December, 1894, he was again taken ill with similar symptoms, and was seen on the first day by Dr. Dock, who found nothing abnormal in the heart-examination. The case then passed into other hands; and finally, because of continued fever, malaise, etc., was sent to the hospital as a suspected case of typhoid. He had also complained of pain under the sternum. When I first saw him he had no fever; the heart was slow and irregular; all of the sounds were prolonged and strongly accentuated, the pulmonary second having the same marked ringing character as when first seen a year before; it was also markedly divided, and, in addition, there were heard all over the heart, especially at the base, friction-sounds of moderate intensity. The heart-dulness was enlarged to the right, extending a finger's breadth to the right of the sternal line. The apex-beat was doubled, the second impulse being less strong than the first. The patient remained under observation for some days, during which time he had no fever; the heart-dulness became normal; the friction and the accentuation of the heart-sounds became much less marked, but were still present. Many careful examinations of the lungs were negative. As all symptoms had disappeared, the patient thought that he had entirely recovered, and so left the hospital. Though advised to return for further examination, he has not reported since his discharge.

Case III.—Mr. R. E., a student, aged twenty-eight years, came to the hospital for an examination of his heart. For a month he had been troubled with frequent attacks of palpitation and marked irregularity of the heart's action, without other symptoms. The examination of the lungs was entirely negative. The apex-beat was very strong, but in normal position. No thrill could be felt. The area of heart-dulness was not enlarged. The heart-sounds were everywhere loud and roughened, especially in the pulmonary area, where the second sound was clangorous in quality, producing a very marked shock. Here also, after slight exertion, double friction-sounds were audible, but were heard sometimes when the heart's action was quiet. The heart-rhythm was quite irregular. Several days after this he was seen again; the heart was slower and more regular; the first sound in the pulmonary area was murmurish; but the second was still strongly accentuated. There was also fine friction at the end of the systole, and sometimes in both systole and diastole. This was heard best in the third intercostal space near the left edge of the sternum. It continued when the patient suspended respiration, but sometimes disappeared altogether. The man was seen at short intervals for a month. The friction and accentuation of the pulmonary second sound entirely disappeared, but after violent exercise a soft systolic murmur was heard at the base, the heart-rhythm becoming irregular. There was no return of the symptoms, and when last seen the heart-sounds were normal.

Case IV.—Mr. A. W., student, aged nineteen years, passed his physical examination in the gymnasium, but it was noted that his heart's action was greatly increased, and that the pulmonary sound was "peculiar." He was told then that his heart was not normal, and that he should report once a month for examination. Becoming somewhat alarmed, he came to the hospital for an examination. He had no subjective symptoms except shortness of breath when attempting to sing. The physical examination, with the exception of that of the heart, was entirely negative. There was a strong apex-beat in the normal location, but no thrill was felt. The heart-dulness was not enlarged. Everywhere, especially at the base, there was pericardial friction. The first sound was murmurish all over, especially in the left second interspace. Here also the second sound was loudly ringing in character, causing a shock that could be felt plainly by the hand. The aortic sound was also increased, but much less intense than the pulmonary, and of entirely different quality. The next examination was made several days later. At this time there was no friction; the first sound in the pulmonary area was very murmurish, and the second still accentuated; otherwise the heart-sounds were normal. Two days afterward he was seen again. There was pericardial friction all over, the loudest and roughest sound occurring just before the strongly accentuated pulmonary sound. The first sound at the base was replaced by a soft, blowing murmur distinct from friction-sounds. For a month after this the man was examined at very short intervals. The friction-sounds varied greatly, often being entirely absent; the pulmonary accentuation and irregularity of rhythm were constant. The soft systolic murmur at the base was thought to be an anemic murmur. Nearly two months after these signs were first noted there were the physical signs of a moderate effusion. This disappeared in a short time, and since then no friction has been heard; the accentuation of the pulmonary sound is much less marked, and the heart is more regular. The patient is still kept under observation.

Case V.—Mr. J. Q., a laborer, aged twenty-seven years, was admitted for treatment of chronic gastritis. He had no symptoms referable to heart or lungs. When examined a strongly marked accentuation of the pulmonary sound was found, with a murmurish first sound at the base. The second sound was also everywhere divided, the division being more marked in the pulmonary region than elsewhere. Though the aortic sound, as heard over the remainder of the heart's area, was unusually loud, it did not have the clangorous quality of the pulmonary sound. The murmurish character of the first sound disappeared when the patient assumed the erect position. No friction-sounds could be heard anywhere; the heart-dulness was not enlarged, and the rhythm was regular. From the strong accentuation of the pulmonary sound, unexplained by the existence of any other condition in heart or lungs, the suspicion of pericarditis was entertained, and the patient was advised to remain for further observation.

When examined the next day, a loud, blowing murmur was heard at the base. It resembled a valvular murmur, was transmitted upward and to the right. This was thought by one of the staff, who saw the patient for the first time, to be an aortic murmur. The second sounds were as before. Two days afterward a peculiar shuffling sound of slight intensity was heard in the pulmonary area, on pressure becoming rough and friction-like in character. For several days after this typical friction-sounds were heard at different intervals; but often they were absent, and the only sign present was the pulmonary accentuation. After being under observation for two weeks, without other signs or symptoms, the temperature suddenly rose to 102° or 103°, and there was marked friction all over the heart-area, with increase of heart-dulness, extending beyond the apex-beat. The pulmonary second sound retained its clangorous character. Under the salicylic-acid treatment, which we have used so largely in this condition and in pleurisy with effusion, the signs of effusion quickly disappeared; but the man still has peculiar shuffling-sounds at the base of heart, with a divided and ringing second sound in the left second interspace. For this reason he is still kept under observation.

Without going further into the detail of these cases, it will be seen that all five presented as a striking and persistent sign a very marked change in the character of the second sound as heard in the left second interspace near the sternum, a change that was not shared in by the aortic second to anything like the same degree. This change could not be explained by any condition other than the pericarditis. It began early, either with the symptoms or preceding them, and, continuing through the course of the disease, disappeared finally only after all other signs and symptoms had ceased. So far as I can remember, the sign was present in all of numerous cases of the disease that I saw in Vienna, and Dr. Dock remembers it as a prominent sign in his experience with this affection. A thorough search of the literature of pericarditis as afforded by the University library did not give much evidence as to observations made of the occurrence of this sign; and the reports of cases are almost barren so far as changes in the character of the heart-sounds are concerned. As the majority of cases reported are those in which effusion has taken place, the chief notice taken of the heart-sounds has been in regard to their weakness, and in only few of the cases without effusion is there a mention of an accentuation of this sound. I have also been unable to find any mention of this sign in any of the special works on the heart and its diseases, and it does not find a place in the articles on pericarditis in any of the recent text-books. The French seem to have made an especial study of this disease, but many of their works in this line I have been unable to examine. So far as I have been able to find, the only notice taken of the diagnostic value of this sign is in the report of the French Congress of Internal Medicine, held in Lyons last October.

Under the head of "Les Signes de la Péricardite Aiguë," M. Josserand, of Lyons, makes this statement, which I translate entire (*La Semaine Médicale*, November 3, 1894):

> In pericarditis the friction-sound is often not heard until some time after the pathologic change has begun, and Stokes asserted that it did not exist in the early stages of the disease. Nevertheless, in my opinion, there is an early sign of true value.
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> When, in the course of an acute articular rheumatism, one auscultates comparatively the base of the heart in the aortic and pulmonary areas, it will sometimes happen that the second sound in the latter place will be found to be much more intense, more ringing, almost clangorous, the inverse condition of that found in chronic aortitis, when the second sound is more exaggerated to the right of the sternum than to the left. Many times this same difference is appreciable to the hand, as on palpation an exaggerated diastolic shock may be felt in the pulmonary area. The presence of this sign should lead one to search very carefully for friction-sounds, which may often be discovered when a superficial examination would have been negative; if not found, their appearance may be predicted within an interval of time of greater or less length. This accentuation of the pulmonary sound occurs early, and is very often transitory; it precedes the appearance of the friction by from one to three days. With some exceptions this accentuation disappears rather quickly, and is replaced by the friction-sound. It is a sign belonging to the initial congestive period, like the crepitant râle in pneumonia. The friction-sound, on the contrary, lasts through the period of the fever, and may be heard many weeks after the defervescence.
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> The pathogenesis of the accentuated sound is most probably the following: In acute pericarditis the friction-sound is most commonly heard along the left border of the sternum and in the pulmonary area. It is probable that the subjacent heart-muscle, which is near the infundibulum of the pulmonary artery, is, itself, congested and turgescent, and that

this part of the myocardium, densified and covered over with a deposit of fibrin, increases the sound of the pulmonary valves, which are in close proximity. For example, there is likewise in pleurisy a slight degree of pulmonary congestion, which transmits the sounds arising in the glottis more or less modified into bronchial breathing and egophony. So there is in pericarditis a certain amount of cardiac congestion which transmits to the ear and to the hand the amplified sound of the pulmonary valves.

This sign has great importance with reference both to diagnosis and to treatment. In doubtful cases, when one hesitates between a friction-sound on the one hand and an anemic or extra-cardial murmur on the other, it enables one to decide in favor of the friction. Moreover, this sign may be of interest not only in pericarditis; endo-pericarditis is not rare. This diastolic acccentuation indicates, therefore, that the heart is affected, the localization and intensity of the condition being with difficulty made precise; and that there should be instituted early a revulsive medication, without waiting further for the later signs of murmur and friction-sounds.

While our experience would lead us to confirm M. Josserand's statements in regard to this sign, it will also permit us to add to his observations and to emphasize his conclusions in regard to its importance. It is highly probable that simple pericarditis, occurring without connection with rheumatism or other disease, is of much more frequent occurrence than is ordinarily supposed. Post-mortem statistics show this plainly. The absence of striking symptoms, the too-frequently rare and hasty examinations of the heart, make it especially liable to escape recognition. As effusion may be long delayed or very slight, the presence of pericarditis may not be recognized from the slight signs and symptoms; and the patient may often be allowed to engage in pursuits of actual harm in adding strain to a heart already working at a disadvantage. Three of our patients while in this condition were permitted to do regular gymnasium-work, although exercise produced in each very disagreeable palpitation and shortness of breath. The recognition of the disease by this sign is therefore of the greatest importance to the patient, who may be guarded from exposure and injudicious acts, put upon suitable treatment, and carefully watched for the signs of effusion, which may come on at any time and prove to be a very serious affair. Many unexplained cases of palpitation and cardiac irregularity may possibly be made clear by recognition of this sign. Several years ago, before our attention was called to the significance of this pulmonary accentuation, we were occasionally puzzled by cases presenting these symptoms, and on physical examination exhibiting this accentuation in the pulmonary area, with peculiar and unexplained basal murmurs. It is now a question whether these were not cases of pericarditis.

This sign is certainly a very early one; but in our experience it is not transitory, being the very last thing to disappear. If the explanation of its cause as given by M. Josserand is correct, and it certainly seems adequate to me, having arrived at the same conclusion before I saw his article, it must happen that a thickening of the pericardium around the pulmonary artery or a deposit of fibrin in the same region must amplify the sounds of the pulmonary valves so long as the condition exists; and this may be present for a long time after the active disease has subsided. It is conceivable then that this accentuation must exist in all cases except the very mildest, in which the pathologic changes take place in only a very slight degree. The intensity of the accentuation of the sound will depend therefore upon the degree and character of change in the muscle and pericardium, and upon the amount and character of the exudate, whereby there is an increased conductivity of the pulmonary sound in the space lying between the valves and the chest-wall. In adherent pericardium, and in adhesion of the pericardium to the pleura, we should expect to find a similar increase in the heart-sounds; and this was very striking in one case that I have seen.

The part of the pericardium surrounding the pulmonary artery seems to be, as M. Josserand has indicated, a favorable spot for the development of the disease; and in looking over the reports of cases one is struck with the frequency with which it is localized in this area. As to the occurrence of this sign in every case of pericarditis, it is of course evident that it will not be found in those cases in which the disease is localized in some other part of the pericardium than at the base, or in those cases in which there is but little change in the region of the pulmonary artery. But in the great majority of cases the pulmonary pericardium is affected, and consequently this sign will be found to be present. It is true that all of the heart-sounds may be increased in some of the cases, but the fact that it is the pulmonary second which is especially affected is clearly shown by the sharp localization of this accentuation in the second interspace on the left, the frequent presence of a distinct shock in this region, and the complete difference in quality between it and the aortic sound as heard elsewhere over the heart-area.

The occurrence, therefore, of an accentuated second sound in the left second interspace that cannot be explained by any other condition in heart or lungs should always excite suspicion, especially if it is accompanied by murmurs resembling the so-called anemic murmurs, but without the presence of an anemic condition to account for them. The patient should be advised accordingly, and repeated and frequent examinations of the heart should be made so long as the condition lasts. In rheumatism and all other diseases in which pericarditis may be a complication, the sign is of preëminent importance as giving early and definite warning of involvement of the heart. Moreover, by calling attention to the necessity of frequent examinations of the heart, the careful consideration of this sign may lead to the clearing up of many obscure and puzzling heart-cases. As it alone has been the constant sign in the cases of pericarditis that I have seen, the friction-sounds being often entirely absent, and many times so like valvular murmurs that it was impossible to differentiate them, I look upon it as one of the most striking and important signs of the disease, and beg leave to assert for it a prominent place in diagnosis.

THE TREATMENT OF CONJUNCTIVITIS NEONATORUM BY IRRIGATION WITH STERILIZED WATER.

By W. REYNOLDS WILSON, M.D.,
of Philadelphia.

I desire in reporting the following cases of conjunctivitis of the newborn, studied in a recent service in the maternity wards of the Philadelphia Lying-in Charity, to describe a method of treatment recommended both by its simplicity and by the results of its employment.

The five cases may be divided into two groups representing the manner of infection, those incident to direct or primary infection and those occurring secondarily by contact. Although the results of treatment were modified by the character of the infection, those cases due to secondary infection yielding more promptly, the usual duration of the disease was appreciably shortened by the method about to be described.

The gonococcus is persistent in its power of inoculation, and as long as the germ is present the blennorrhea will remain. The amount of inflammation also will depend upon the number of infecting elements present, and as they decrease in number the conjunctivitis decreases in intensity. The course and duration of the disease will depend, therefore, upon two factors: First, the intensity of the infection; second, the thoroughness with which the conjunctiva is cleansed of the attacking gonococcus. The treatment as usually pursued consists first in prophylaxis; second, the application of astringents; third, the use of antiseptic irrigation; fourth, of external applications in the form of hot and cold compresses. The prophylactic method is undoubtedly the best way of combating the disease, and is best carried out by careful antiseptic douching of the vagina prior to labor, and cleansing the conjunctiva as far as possible as soon as the head is born. This treatment, which should be followed in every case of labor whether the presence of specific vaginitis be suspected or not, fulfils, in most cases coming under the care of the accoucheur, the requirements of prophylactic treatment. In Germany Credé's method—the instillation into the conjunctival sac of one or two drops of a 2 per cent. solution of silver nitrate—is resorted to as a prophylactic measure. Silver nitrate, in the proportion of 1 per cent., applied to the conjunctiva by a camel's-hair pencil, the excess being removed by a solution of sodium chlorid, represents the astringent method of treatment (Veasey, Medical News, vol. xlvi, No. 8). The application should be made at longer intervals, namely, once in twenty-four hours, and should be continued during the suppurative stage. The saturated solution of boric acid, mercuric chlorid, 1 : 6000, and the solution of potassium permanganate of the same strength as the latter are the common antiseptic solutions used.

In the cases I report the form of treatment was that in which sterilized water by irrigation was used purely for its detergent effect. I have submitted the ordinary house-reports from the record of each case to illustrate the histories and results of treatment.

Case I.—Infant of M. McA., was born on October 17, 1894. The record of pregnancy gives no facts pertaining to the infection. As to the labor, there was complete dilatation with rupture of the membranes forty-five minutes before expulsion of the head (see the relation of the second stage of labor to the occurrence of ante-partum ophthalmia as described by Friedenwald, Medical News, vol. lxvi, No. 10). The internal examination on the eighteenth day revealed no evidence of chronic gonorrhea (vegetations on the anterior vaginal wall). The conjunctivitis developed on the fourteenth day. The first secretion was marked by hemorrhagic discharge. The left eye was affected as a result of contact, there being another case of the disease in the ward. Irrigation with sterilized water was ordered for twenty minutes out of every hour. On the fourth day improvement was noted; there were patches of congestion and plaques of lymph on the palpebral conjunctiva.

Case II.—Infant of A. L., was born on November 7th. The record of the pregnancy was negative as to infection. The dilatation was succeeded in one hour and a half by rupture of the membranes, and in two hours and forty minutes by expulsion of the child. The weight of the child was five-and-a-half pounds. The woman was anemic, and she was placed on pil. ferri carbonat., gr. iij, four times daily, with improvement in the general condition at the date of discharge. Conjunctivitis developed on the second day in the child, in conjunction with icterus; the serous secretion was of a deep-yellow color. Irrigation with sterilized water was ordered twenty minutes out of every hour, together with oil-inunctions. At the date of discharge improvement was noted corresponding to the improvement in the mother's condition as a result of treatment. Mother and child were discharged on the seventeenth day after confinement.

CASE III.—Infant of M. J., was born December 1st. There was no specific history, according to the statement of the gravida, although her husband had led an irregular life, and there was no history of leukorrhea. As to the labor, there was complete dilatation, followed in twenty minutes by rupture of the membranes, and in thirty minutes by the expulsion of the child. The woman was pallid and neurotic, and was placed on Fowler's solution, gtt. iv, three times daily. At the date of discharge her general condition was improved. Conjunctivitis developed in the child on the eighth day, with early signs of swelling and mucous discharge; both eyes were affected. The treatment was with boric acid and cold compresses during the first half-day, and was changed to irrigation with sterilized water for fifteen minutes out of every hour, followed by marked improvement on the second day; the swelling and secretion disappeared. On December 15th (the fifth day from the date of infection) there was no secretion, and the swelling was much reduced.

CASE IV.—Infant of A. McN., was born January 6, 1895. The record of pregnancy shows no history of antecedent gonorrhea, although the subsequent course of the case points to the suspicion of its presence. The duration of the second stage of labor was one hour, marked by the simultaneous dilatation of the cervix and rupture of membranes. The puerperium was normal. Mild ophthalmia developed in the child on the tenth day. The infection was from contact. The treatment was by irrigation with sterilized water for five minutes in every half-hour. On January 22d (the sixth day from the date of infection) the eye was well. The child developed dactylitis and also snuffles.

CASE V.—Infant of Mrs. E., was born January 10th. There were during the pregnancy strangury and frequent micturition, irrespective of pressure. The gravida presented a history of three successive vulvo-vaginal abscesses previous to the time of her present pregnancy. Dilatation was completed eight hours after rupture of the membranes. The duration of the second stage was fifty minutes. The puerperium was normal. Conjunctivitis developed rapidly in the child on the fifth day, with acute swelling and the early appearance of purulent discharge; there was a decrease of swelling, discharge, and hyperemia on the second day after infection. Treatment was by irrigation with sterilized water five minutes out of every half-hour. On January 18th the second eye was affected, but less acutely than the first. The eyes were in good condition on the twelfth day following infection.

In reviewing these cases the following points of interest present themselves:

1. The beneficial effect of general tonic treatment of the mother during the early period of lactation, as noted in Cases I and II.

2. The efficacy of irrigation in reducing the acute inflammatory symptoms incident to the early stage of the infection, and the consequent decrease in the duration of the disease.

3. The occurrence of the rupture of the membranes in every case but one, Case V, as indicating subpartum, rather than antepartum, infection.

4. The fact that in each case the vertex presented and that labor progressed with a rapid second stage.

5. Although the diagnosis was in no case confirmed by bacteriologic examination or by the appearance of gonorrheal plaques on the hard palate, the specific source of the disease was apparent in cases in which a history of gonorrhea was not present, from the spread of the infection from contact.

6. The occurrence of frequent examinations during the second stage of labor, after rupture of the membranes, on account of the instruction to students present at each case, and the consequent greater risk of infection while the head was still within the lower uterine segment and before its passage through the cervix, considering that the chance of infection is progressively less according to the proximity of the infected area of the birth-canal to the vulvar outlet.

7. The subsidence of acute inflammatory symptoms and the cessation of the discharge (excepting in Case II, in which improvement was noted without a clear statement as to the presence of discharge) within something over eight days as an average, the shortest duration of any one case being five days.

8. The exclusion of astringents and antiseptics as adjuncts to the treatment, excepting in Case III, in which boric acid was used during the early stage of the conjunctivitis with comparatively no beneficial effect.

The treatment is conducted as follows: The infant, turned upon its side, is held upon the nurse's lap, the clothing of the nurse and child being protected by rubber cloth. The water, contained in a two-quart glass irrigating-vessel at a height of four feet above the child's head, is injected by means of a glass nozzle attached to the irrigating-tube, the caliber of which is three millimeters in diameter. The lids are separated so as to allow the stream of sterilized water, at a temperature of 99°, to irrigate thoroughly the surface of the conjunctival sac. The treatment is most effective when the irrigation is continued for five minutes out of every half-hour for the first twelve or eighteen hours, and decreased in frequency according to the decrease in symptoms. The infected eye is held downward toward the nurse's lap so as to prevent the infection of the other eye by contact with the irrigating fluid. By this treatment during the first stage of the disease the mucous discharge is removed and the congestion relieved; during the later stages the shreds of lymph and purulent discharge are removed and the granulating surface of the conjunctiva stimulated. The advantages on the side of isolation are evident, as only the rubber coverings come in direct contact with the secretion from the eyes after the child is in position, and there is much less likelihood, under proper precautions, of spreading the infection than when eye-droppers and compresses are used. Usually the infants make very little effort at resistance, and frequently submit to the treatment without signs of discomfort.

CLINICAL MEMORANDA.

SUCCESSFUL REMOVAL OF A LARGE TUMOR OF THE MESENTERY, WITH RESECTION OF 43 INCHES OF INTESTINE; END-TO-END ANASTOMOSIS WITH MURPHY BUTTON.

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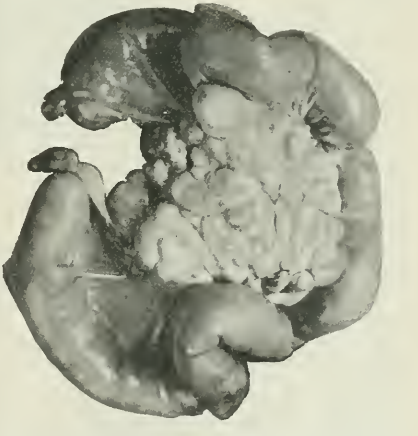
SURGEON N. P. R. R. CO.

M. P. T., aged forty-nine years, a farmer, was brought to Portland Hospital, January 16, 1895, for operation, by Dr. G. W. Maston, of Albany, with whom I saw him in consultation. Dr. Maston had noticed for about three years the presence of a hard tumor in the abdomen, which had grown more rapidly in the last three months, until it was now approximately the size of a double fist. A diagnosis of solid tumor, probably malignant, of the mesentery was made, and an exploratory operation was agreed upon and was performed the next day, January 17, 1895. Dr. Maston made the opening into the abdomen and exposed the tumor, which could be lifted out of the abdominal wound. A careful examination revealed the intimate attachment to the tumor of a large extent of intestine. After consultation as to the feasibility of removal I proposed to Dr. Maston the resection of the intestine involved in the tumor. To this the doctor gave his consent and asked me to execute the operation, which was done with his assistance. The tumor was located in the mesentery and had encroached upon the intestine until the mesentery upon this side of the tumor had been completely obliterated. Fortunately there was free mesentery between the tumor and the posterior mesenteric attachment. The tumor was approximately seven inches in diameter in its greatest breadth and four to five inches in its least, and of almost cartilaginous hardness. The amount of mesentery involved at its base was between six and seven inches.

The details of the operation are perhaps non essential, except in one or two particulars, and I will confine my report to these. The two points of most importance were to cut the gut where its blood-supply would not be interrupted by the extensive section of the mesentery, and to handle this extent of mesentery without excessive hemorrhage. By lifting the tumor up, and thus putting the mesentery on the stretch against the light background of a window opposite, it was rendered semi-translucent, and the bloodvessels (principally the veins, I believe) could be quite readily discerned in their course through it to and from the gut. A point was selected on each side of the tumor which this blood-supply seemed to reach, passing clear of the tumor, and was marked by passing a heavy silk ligature around the gut at this point. These ligatures were tied loosely, merely to close the caliber of the gut and to facilitate handling the ends. The gut was then cut with scissors at these points and the mesentery torn downward until clear of the base of the tumor. I can recommend this maneuver, because the tear will follow the general radiations of the mesentery, and starting right I can hardly conceive that any vessel of any importance can be torn across. With the mesentery still upon the stretch, it was cut for perhaps three-fourths of its extent across the base by successive half-inch snips of the scissors, without any hemorrhage worth mentioning. The balance of it was then ligated *en masse* with two heavy silk ligatures. The bleeding was thus effectually prevented and did not exceed one-and-one-half ounces in the whole operation. The mesentery was stitched together with a continuous catgut suture after the usual method, and the intestine united end-to-end with the No. 4 Murphy button. The large-sized button was used because the caliber of the intestine was above the average and accommodated the button without difficulty. Thanks to Dr. Murphy, the approximation of cut intestine is the simplest part of intestinal surgery. It is simply a new version of the old story of Columbus and the refractory egg. The toilet of the peritoneum was made and the abdominal wound closed by Dr. Maston. The case was reported to the Portland Medical Society on January 23d, and the resected intestine measured in the presence of the Society full 43 inches.



The accompanying illustration shows the tumor with the intestine inflated. I confess to some astonishment when first measuring the gut, as the unfolding of the reduplications ran rapidly into feet. I had supposed I was removing about eighteen inches. The intestine resected was undoubtedly from the ileum, but just what portion I am unable to say.

The time occupied in the operation was about one hour. The patient was put to bed with a pulse of 84 and no evidence of shock. There was a reactionary temperature of 102°, but this fell to normal at the end of forty-eight hours, and subsequent progress to recovery was practically without incident worthy of mention. Flatus began to pass about twelve hours after the operation. The bowels responded to enemata given once daily until about the sixteenth day, when they began to move of their own accord. The man was allowed only water for the first two days, and then liquid food, broths, milk, etc., until about the twentieth day, after which time suitable solid food was allowed until he has now, for some time, been taking regular diet. He has, in great part, recovered his strength and weight. This is now the forty-seventh day, and we have not yet seen the button. The nurses are instructed to watch carefully for it; but considering the early passage of formed stools, I think it may have been overlooked. However, when we bear in mind one of the cases reported by Dr. Murphy in THE MEDICAL NEWS of February 9, 1895, in which the button was passed after two months, and also with the entire absence of any symptoms indicative of the presence of a button in our patient, we have every reason to hope that no complications will arise at this late date.

In the interest of statistics in the use of the Murphy button I shall, however, report any developments that may arise in the future.

SUMMARY.

The case is interesting for the following reasons:

1. The extensive amount of intestine removed, forty-three inches, without apparent discomfort, gives us courage in this line of work, having been excelled in this country, so far as I know, only by the case of Dr. J. W. Elliot, of Boston.

2. The method described, whereby the points of section of the gut were definitely located, I think of value.

3. The ease and safety with which the mesentery may be torn in the course of the bloodvessels commend this method as superior to cutting.

4. It adds one more successful case to the already large and fast-growing record of the Murphy button.

The specimen was submitted to Dr. Everett Mingus, Professor of Surgical Pathology of the Medical Department of the Willamette University, who has returned the following report:

PORTLAND, ORE., February, 1895.

Upon examining specimen given by Dr. F. Cauthorn and taken from a tumor from the mesentery, I note the following conditions:

The specimen is firm on pressure and has a gritty resistance to the knife; that part of the specimen which corresponds to the periphery of the tumor has cyst-cavities.

Microscopically it is characterized by almost perfect uniformity in cellular construction. There are a few delicate bands of connective tissue passing in various directions through the specimen, but the fibrous tissue is an entirely subordinate element in comparison with the great mass of embryonal connective cells that make up the tumor. The embryonal connective-tissue cells are of the large spindle-cell variety, and toward the center of the tumor show degeneration; toward the periphery of the tumor there is considerable fatty tissue. The bloodvessels have no distinct walls.

From the above appearances the nature of the specimen is that of large spindle-cell sarcoma.

Respectfully, E. MINGUS.

A CASE OF INCISED WOUND OF THE PERITONEAL SURFACE OF THE KIDNEY.[1]

By H. R. GAYLORD, M.D.,
RESIDENT PHYSICIAN, PHILADELPHIA HOSPITAL.

M. R., aged twenty-eight years, a widow, was admitted to the surgical wards of the Philadelphia Hospital on the night of December 31st. She had been removed from a disreputable resort, and the ambulance-surgeon had been told that the patient was suffering from a wound in the right side. When questioned, she gave the history of having fallen on a butcher's knife, four days previously, while at service in the country. The manner in which this had occurred was, that she had been going from the house to a near-by spring, carrying in her right hand a pan in which was a large butcher's knife. Through some mishap she had fallen and the point of the knife had entered her side. She appeared to be suffering acutely, and her face wore an anxious expression. The examination by the resident on duty showed the following conditions: There was what appeared to be a superficial wound over the eleventh rib on the right side, two-and-one-half inches long and at a slight angle to the line of the rib. It was partly united, and the usual antiseptic dressing was applied. The abdomen was distended and tympanitic, except in the median line, where there was dulness extending from the pubes to within two inches of the umbilicus. There was the appearance of general anasarca, most marked in the legs. Examination of the left lung elicited harsh breathing and bronchial râles. The right lung showed the same condition above the fourth interspace, with markedly harsh breath-sounds at the base. Respiration was labored and rapid, and the sputum was rusty. The temperature on admission was subnormal, but soon rose to 101°, and remained at that level. A hasty examination of the urine, which was pale in color and somewhat cloudy, showed 20 per cent. of albumin and a few granular casts.

No further data are recorded. Stimulants were given, and twenty-four hours later the woman's lungs had cleared up, her sputum was no longer rusty, and her pulse was satisfactory. The following morning she aborted, and a five-months fetus was delivered with the membranes intact. No unpleasant symptoms followed the abortion, and on the sixth day after admission the patient was in a condition to be transferred to the obstetric wards of the hospital.

On January 6th the woman came under my care, and I observed the following conditions: The lochial discharge was small in quantity, slightly tinged with blood, and not offensive. The woman was suffering from marked dyspnea, and requested to be propped up on pillows. She complained of pain in the right side, and examination showed the wound as already described, just over the eleventh rib, and well united. There were marked abdominal distention and some edema of the legs. Examination of the abdomen showed a large area of absolute dulness on the right side, extending from the umbilicus upward to the level of the fourth rib, and from the median line anteriorly to the vertebræ posteriorly. There was also what appeared on palpation to be a superficial mass beneath the abdominal wall, in the right iliac fossa. There was some dulness in the flanks, but the remainder of the abdomen was tympanitic. Hyper-resonance was elicited over the entire left lung, with moist bronchial râles and harsh breathing. The right lung was somewhat impaired in resonance down to the fourth rib, where the absolute dulness described was encountered. The heart-sounds were weak and distant, the pulse rapid and compressible. The skin and mucous membranes were anemic. The temperature remained at about 100° F., with slight variations until death. Examination of the urine showed it to be pale yellow, slightly cloudy, of acid reaction, and with a specific gravity of 1012. By the microscope there were found a few pus-cells and some granular casts present. Albumin was present to 20 per cent. At this juncture the question of opening the abdomen was considered, but the patient's condition was such that surgical interference was impossible. The wound, though firmly united, was not believed to be penetrating, and the condition was diagnosticated as abdominal hemorrhage. The patient received generous stimulation, but gradually grew weaker. On the morning of January 11th, while being turned on her side, she uttered a loud scream, and when the doctor reached her, two minutes later, she was pulseless and in a few minutes more had ceased to breathe.

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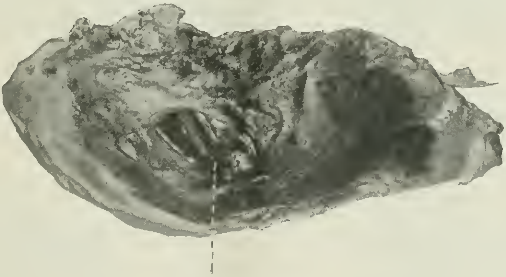
[1] Read before the Philadelphia Pathological Society January 24, 1895.

The autopsy, on the day following death, showed the following conditions: The body was that of a well-nourished woman, with evidences of anasarca, especially of the lower extremities. The abdomen was prominent. On the left side of the abdomen 2 cm. below the ribs, in the axillary line, there was an apparently superficial stab wound. On incision a considerable amount of blood flowed out of the abdominal cavity. The intestines and great omentum were found matted together, and in front of the mass thus formed two large spaces, the walls of which were lined with lymph, contained large quantities of blood. On pushing the intestinal packet to the left an enormous cavity lined with lymph was found. This extended from the dome of the diaphragm, 9 cm. below the clavicle, down to about the level of the umbilicus. All the abdominal viscera were pushed to the left by the contents of this cavity, which were fluid, light purplish in color, and appeared to consist of an admixture of pus and blood.

The wound described penetrated just in front of the eleventh rib through the intercostal muscles, where it ended, leaving no evidence of having entered the abdominal cavity. There was at the point just opposite the tenth rib, on the wall of the sac, some hemorrhagic infiltration. The walls of the sac, in some places, were of a dark-green color, showing signs of sloughing. The anterior surface of the liver, pressed to the median line, formed in part the inner wall of this cavity. On opening the thoracic cavity the lungs were found free in front, the right being pushed up by the diaphgram, the left with a few adhesions at the apex. The left kidney had the appearance of acute inflammation. The right kidney presented upon its anterior surface a lacerated wound, running obliquely, from within outward and downward, and measuring 3.5 cm. The wound penetrated well into the substance of the organ, and its sides showed evidence of blood-infiltration. The track of the knife could now be followed, from a point opposite where it entered the kidney, around the tenth rib to the external wound. On the wall of the sac at this point was what appeared to be the spot where the knife penetrated the abdominal cavity; this, however, was covered with lymph, and marked only by a hemorrhagic spot and some thickening of the sac-wall.

After removal of the matted intestines, with great difficulty, the uterus was found 9 cm. above the symphysis, and measured 6 cm. from the neck to the fundus. The placental site was on the posterior wall of the uterus toward the fundus. The surface of the placental site was raised and covered with a grayish deposit. There was a large sac of blood behind the uterus, extending well down into Douglas's *cul de sac*.



Wound in kidney.

That uncomplicated wounds of the kidney on its peritoneal aspect are a rare occurrence can be best illustrated by the fact that a careful search through the *Medical and Surgical History of the War of the Rebellion* has failed to find a single case. This can easily be explained on anatomic grounds when we consider how limited is the area through which the knife must pass to reach the kidney without injuring the liver and intestines on one side, and the intestines and the stomach on the other.

Many such cases have been reported by Sir Astley Cooper, John Bell, Hunter, Ackerly, and others.

From a rather full search of the literature it would appear that this case is unusual in that the woman wandered about the streets for four days after receiving the wound (a fact which was ascertained subsequently), and that by the time she was led to seek medical aid the parietal wound had united, thus leaving in doubt the true state of affairs. The patient passed no blood by the urethra, which has been explained by Morgagni as due to the fact that in extensive wounds of the kidneys, in which there is free hemorrhage, the blood-pressure in the kidney itself is so reduced that its excretory function ceases. There was no attempt at union of the renal wound, although Klebs reports having seen incised wounds of the kidney, and even bullet-wounds, filled by scar-tissue.

The accompanying illustration shows the kidney as it appeared after removal. Its marked flattening is due to the position it occupied as part of the sac containing the extravasation of blood, being pressed against the muscular structure posteriorly, from which position it was almost impossible to strip it without mutilation.

A CASE OF ACCIDENTAL SPONGE-GRAFTING OF THE CONJUNCTIVA OF EIGHTEEN MONTHS' DURATION, WITH SOME SUGGESTIONS UPON SPONGE-GRAFTING IN EYE-SURGERY.

By A. G. THOMSON, M.D.,
OF PHILADELPHIA;
DEMONSTRATOR OF OPHTHALMOLOGY IN THE PHILADELPHIA POLYCLINIC, AND OPHTHALMIC SURGEON TO BETHANY DISPENSARY AND TO THE DISPENSARY OF THE CHILDREN'S HOSPITAL.

THE case herewith reported presents two interesting features:

I. The conditions under which the foreign material was introduced and the length of time it remained attached to the conjunctiva.

II. A beautiful illustration of the so-called process of sponge-grafting, which may suggest for it some further uses in eye-surgery.

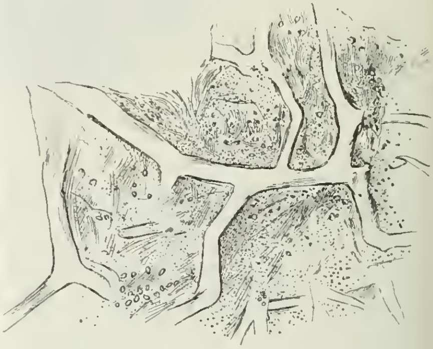
The case was that of a colored girl, sixteen years old, who came to Wills' Hospital, complaining that there had been something growing in her right eye for the preceding eighteen months. On examining the eye I found a small swelling on the outer portion of the lower lid, giving the appearance of a fair-sized chalazion. As I drew down the lower lid to expose the palpebral conjunctiva a small mass protruded, yellowish in color, from which exuded a thin, purulent discharge, and resembling a papillomatous growth in appearance. Subsequent questioning showed that the girl had been an inmate of the House of Correction, having been discharged from that institution last August, after two years' confinement, and that six months after admission she noticed one morning this growth in the eyelid. She consulted one of the female attendants, and was told to bathe the eye in hot water. After two weeks of this treatment and the growth not disappearing, the attendant resorted to surgical means and attempted to remove it with a pair of forceps. This time she was more successful, securing a portion of the sponge and with it some of the conjunctival tissue, and causing some bleeding from the lid.

As I could not account for the presence of the growth, and also as it resembled sponge in character, I directed my questions with that object in view. The girl then stated that all the girls in her department washed themselves with one large sponge several times a week, and that often after washing she had noticed small particles of sponge adhering to her skin. With this history I then examined a piece of the mass microscopically, and found it to be indeed sponge. The photograph taken did not turn out well, so I cannot show the position and relation of the sponge in the conjunctival sac. On examining the lid more closely I found the sponge firmly implanted in the palpebral conjunctiva toward the outer side of the lid, yellowish in color, oval in shape, and with ragged edges; it was 8 mm. long, 7 mm. wide, and 3.5 mm. high. As for the remaining portions of the eye, they were apparently normal, with the exception of that portion of the ocular conjunctiva that came in contact with the sponge when the eyelid was closed. Here the vessels were somewhat enlarged and the conjunctiva slightly hyperemic.

It would seem improbable that a foreign material the size of the piece of sponge stated, consisting of a substance subject to very septic surroundings (*i. e.*, a sponge used in the House of Correction on all kinds of people until it became so rotten that it was falling to pieces), could remain so long in the conjunctival sac without causing the slightest discomfort and only a very little irritation; but I think, if we look into the condition more closely, the absence of symptoms can be accounted for, as the sponge, being of soft animal tissue, becoming attached to the conjunctiva, the granulations springing up in the interstices of the sponge virtually made it a part of the lid itself, and it therefore caused no more irritation than any other small piece of granulation-tissue in the same position.

As a case of sponge-grafting, the formation of new tissue, as seen in the sketch of the section, shows it to be a perfect success.

FIG. I.



Showing granulation-tissue intersected by sponge-fibers. × 300.

This method of using sponge to replace lost tissue was first suggested by Prof. D. J. Hamilton, of Edinburgh, in 1881, who recognized the fact that in the organization of tissue the blood-clot or fibrinous lymph plays only a mechanical and passive part in any situation in which the organized tissue becomes replaced by a fibrous cicatrix. This being the case, he hit upon the idea of using sponge as a substitute, as the interstices of the sponge resembled the fibrinous network in a blood-clot or in fibrinous lymph, and at the same time being an animal tissue it would undergo tissue-digestion.

The process that occurs when a piece of sponge is placed in contact with an exposed surface and remains long enough is that a quantity of fibrinous lymph is effused into the sponge; this lymph becomes organized, and then is replaced by granulation-tissue, which extends and fills the interstices of the sponge, with, finally, a total absorption of the sponge-skeleton itself, leaving only a mass of cicatricial tissue.

The girl refused to allow me to remove the entire sponge at that time, but agreed to the removal of a small portion. This was excised, with a small piece of the surrounding tissue, which was cut and mounted by Dr. Charles W. Burr. In hardening the section the free portion of the sponge, that part not being infiltrated by new tissue, was detached from the remainder of the graft. This accident is almost impossible of avoidance, owing to the destructive effect of the hardening fluid on the sponge. I am, therefore, unable to show all the stages from the deep granulation-tissue to the lymph in free sponge.

The section presented the following appearance: A mass of granulation-tissue in different stages of development intersected in all directions by a network of yellowish bands that represent the sponge-skeleton. The base of the new growth is composed of embryonic, more or less developed, connective tissue, which in the deeper layers has quite replaced the sponge-fibers. Above the deep part, gradually shading from it and filling the interstices of the sponge, is the new tissue, which consists of new granulation-tissue, blood-cells, leukocytes, giant-cells, etc.

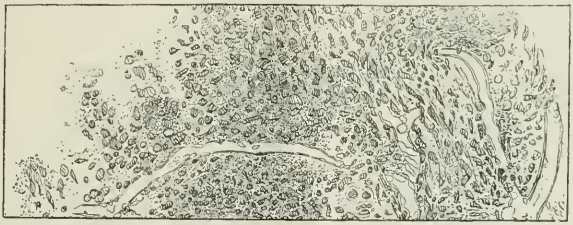
The evidence of tissue-growth by aid of sponge-graft is clear, but the mode of absorption or disappearance of the sponge-skeleton is as yet unknown, although this undoubtedly occurs, as we find in the deeper layers that the sponge-skeleton is more reduced in size and the fibers are fewer in number.

It is commonly believed, although the section does not show it, that absorption is due to an eroding influence of the giant-cells analogous to the action of the osteoclasts in bone-formation, as they are found in great numbers closely adhering to sponge-fiber.

In my sections there are several places showing giant-cells in close contact with the fibers, but I cannot see any evidence of absorption from this cause. I find, also, that these giant-cells are numerous in only the superficial portions of the graft, where we would not as yet look for absorption, and are extremely rare in deeper portions where the absorption takes place. My own opinion is that absorption is more probably due to a softening or separation of the fiber of a laminated structure by the pressure of the densely packed surrounding granulation-tissue, and, finally, absorption by the juices of the tissues, as the disappearance of the sponge is seen in only the deeper layers and apparently affecting the whole fiber at the same time.

So far as I can learn, this is the first instance in which sponge has been grafted, either intentionally or accidentally, on the conjunctiva. From the undoubted evidence of formation of new tissue, from the non-irritating properties of the sponge as seen, from the means under which it was introduced and the length of time it remained in the conjunctival sac, and from the microscopic proof of its final absorption, we have every reason to believe that sponge-grafting is a valuable means of replacing tissue lost by burns or injuries to the eyelids, which are eventually followed by ectropion, entropion, symblepharon, etc., and from the disfigurement caused by shrinking cicatrices.

Fig. 2.



Showing absorption of sponge-fibers. × 450.

A CASE OF GASTROPTOSIS AND MERYCISMUS, WITH VOLUNTARY DISLOCATION OF THE STOMACH AND KIDNEY.[1]

By ALBERT ABRAMS, A.M., M.D. (Heidelberg),
PROFESSOR OF PATHOLOGY, COOPER MEDICAL COLLEGE, SAN FRANCISCO, CAL.

The case that I have the honor of presenting to you this evening is unique in many respects, and I have been unable to find anything like it in medical literature. The young man is twenty years of age. In June, 1892, he fell on his right scapula, without any appreciable sequences. About eight months after the accident, in consequence of confinement incident to his occupation as a chemist, he began to suffer from neurasthenic symptoms, which had become intensified at the time he was referred to me by Dr. Jones, of this city. I have never regarded neurasthenia as a pathologic entity, but as a symptom of varied pathologic conditions; and I can say, without exaggeration, that I have never yet examined a case of so-called neurasthenia without discovering some distinct morbid condition which, when removed, cured the affection. The diagnosis of neurasthenia is a mistake in diagnosis. It is a conclusion based on subjective symptomatology. Subjective symptoms should only be employed as accessory evidence in our objective examinations.

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[1] Presented to the San Francisco Medico-Chirurgical Society, February 4, 1895.

This patient's chief complaint is and has been the rapid accumulation of gas in the stomach, and in his efforts to expel the gas he has developed unusual control over the diaphragm, to which I attribute some of the visceral phenomena that I shall presently show you. In general the patient suffers from nervous dyspepsia, prolapse of the transverse colon, stomach, and right kidney, a symptom-complex described by Glenard as *enteroptosis*, a term which in our case may be substituted by a better one, viz., *splanchnoptosis.* The prolapse of the abdominal viscera in this case is acquired, and may be attributed to a mechanical origin, superinduced by repeated voluntary diaphragmatic contractions of the abdominal viscera. The apex-beat of the heart can be felt in the fifth intercostal space within the mammary line, but by diaphragmatic action the patient can cause it to descend to the seventh intercostal space, a condition, if I may so call it, of *voluntary cardioptosis.* You will observe when I ask him to dislocate his right kidney, the latter can be distinctly seen and felt as it bulges in a limited area of the right hypochondriac region in the mammary line. The kidney recedes on suspension of diaphragmatic action. That the kidney resumes its normal place is evidenced by the distinct change in the percussion-note in the right lumbar region. I will now introduce the soft rubber stomach-tube, but before it enters the stomach I wish to direct your attention to a method of intra-thoracic auscultation recently described by Richardson. If I connect the terminal of my stethoscope with the stomach-tube, with the end of the latter distant about ten inches from the incisor teeth I hear the two sounds of the heart with unusual distinctness. I direct attention to this method of auscultation because I believe that, while its use will always be limited, it will prove of signal value when ordinary auscultation is unsatisfactory. In this case I thought a murmur was present, but suspicion was dispelled by intra-throracic auscultation. I believe the latter form of auscultation to subserve another, to my knowledge, hitherto undescribed purpose in percussion of the stomach. In the employment of the gastrodiaphane the clinician is forced to admit the uncertainty of conventional methods in determining the area of the stomach. This I attribute to the fact that when percussion is attempted over the stomach, especially in pathologic cases, the transmitted percussion-blow causes the stomach to contract, and in place of dulness one obtains a tympanitic sound. Now, with the rubber tube in the stomach connected with the stethoscope, as in Richardson's method of auscultation, percussion conducted over the entire area of the stomach yields a clear metallic percussion-sound. This method of intra-gastric auscultation is worthy of development.

I will now introduce the gastrodiaphane. You will observe that I direct the patient to bring his chin forward on his chest. This maneuver greatly facilitates the introduction of the tube by bringing the esophagus in a direct line with the throat. You can now see the illuminated area. By shifting the lamp I can trace the stomach nearly to the cardiac orifice. Illumination shows the stomach to be prolapsed (*gastroptosis*) and only slightly dilated. You can also see with what ease the patient shifts his stomach about; to the right, left, upward, and downward. The greatest voluntary dislocation is upward. He first dislocates the stomach downward to a point on a level with the crests of the ilia, then, by a supreme effort, he draws his stomach upward until it can no longer be seen. When the patient practises rumination he throws his stomach into a vertical position, which you can easily see. The phenomenon here noted may explain some cases of merycismus and food-regurgitation. A feature readily observed in this case is *peristaltic unrest* of the stomach. I will produce it by percussing the stomach-region. You note that the muscular waves diminish the extent of the illuminated area.

The patient can also develop a *phantom-tumor.* This he does by buccal insufflation of the stomach, and by relaxing his recti muscles and forcibly contracting his diaphragm; at the same time be arches the vertebral column forward.

As a concluding phenomenon the patient will demonstrate his ability to compress the aorta to obliteration, causing a disappearance of the femoral pulse. This phenomenon I likewise attribute to contraction of the diaphragm at a point where the artery passes through the muscle.

A CASE OF GLOSSITIS IN WHICH THE MEMBRANE COVERING THE TONGUE CONTAINED KLEBS-LOEFFLER BACILLI.

BY H. R. WHARTON, M.D.,
OF PHILADELPHIA;
SURGEON TO THE PRESBYTERIAN, CHILDREN'S, AND METHODIST HOSPITALS

ON November 19th, in consultation with Dr. Devine, I saw J. McK., aged six years, who was first seen by Dr. Devine on the previous day, and at that time complained of difficulty in swallowing and inability to close the mouth on account of the swollen and painful condition of the tongue. At this time the tongue was most swollen upon the right side, and was heavily coated with a thick patch of membrane that extended well over the whole dorsum of the organ. Upon examination of the patient I found the tongue much enlarged and partly protruding from the mouth, and covered with a thickened epithelium or membrane, which could be stripped off without much difficulty; there was also a patch of whitish membrane upon the inner surface of the right lip and upon the inner surface of the right cheek; the neck in the region of the submaxillary glands was swollen, and the submaxillary lymphatic glands were markedly enlarged. The patient had a temperature of 101°, and was unable to rest well upon his back on account of the profuse salivation, which in this position induced painful efforts at swallowing; he therefore preferred the sitting posture, leaning forward, to allow the saliva to escape from the mouth.

Upon opening the mouth widely I found the tongue very much enlarged, especially upon the right side, and, upon palpation with the finger at one point upon the dorsum, a sense of fluctuation was detected, so that I suspected that a collection of pus might be present. I removed a portion of the thick membrane from the dorsum of the tongue and placed it in a sterilized bottle for bacteriologic examination. I then made a deep incision into the tissues of the dorsum of the tongue on the right side, which was followed by the escape of a large quantity of blood and serum, but no pus was detected in the fluids which escaped. A short time after the incision was made the patient was able to close his mouth and to swallow without much difficulty, and was so much more comfortable that he was able to rest in the recumbent posture.

I saw the patient again with Dr. Devine on the following day, and, although he had had a more comfortable night, I found the tongue still swollen and covered with membrane, and he still had profuse dribbling of saliva. I again incised the tongue freely in the swollen area in two places, and explored the incision with a director to open up, if possible, any pocket containing pus, but there escaped from the incisions only blood and serum. In a short time after the incisions had been made he became very comfortable, the swelling of the tongue diminished rapidly, and in a few days Dr. Devine reported to me that he was entirely well.

The membrane removed from the tongue was sent to Dr. Ravenel, at the Department of Hygiene of the University of Pennsylvania, who kindly examined it, and made the following report: Cultures made from the membrane sent from the case of glossitis contain bacilli which, in their morphology, resemble those of diphtheria very closely. A second report states that a more careful examination confirmed the opinion previously given, and Dr. Ravenel states that the Klebs-Loeffler bacillus was present, and after isolating it in pure culture a guinea-pig of 400 gms. weight was inoculated subcutaneously, death following in seventy-three hours; a post-mortem examination gave a typical picture of the lesions produced by the Klebs-Loeffler bacillus; Dr. A. C. Abbott also certified as to the correctness of this report.

The case reported seemed to me to be one of ordinary glossitis, a comparatively rare affection, but of which I have seen a few instances, all presenting clearly the clinical symptoms shown in this case, including the profuse development of thickened epithelium or membrane which was present upon the inflamed tongue. Had I not had made a careful examination of this membrane by most skilful bacteriologists I should not have suspected the presence of the bacillus, for I have seen the same conditions presented in other cases of glossitis, and have in none of these cases noted the constitutional disturbances which would be presented when a diphtheric deposit involved an equal surface. Whether the case was one originally of glossitis, with a diphtheric infection grafted upon it, or whether the diphtheric infection was primary and the inflammatory condition of the tongue was secondary, I am unable to decide. It is also possible that many cases of glossitis in which there are thickened epithelium and membrane upon the inflamed organ are examples of a peculiar diphtheric affection, which does not impress the general system as unfavorably as the cases in which there is tonsillar, laryngeal, or pharyngeal deposits of membrane. This point can only be cleared up by a careful bacteriologic examination of the membrane from a number of cases, and I hope all those who come in contact with cases of glossitis which have not a distinctly traumatic cause will bear in mind the possibility of their having some relation to a diphtheric infection, and will have made a careful bacteriologic examination of the membrane.

Gross mentions a diphtheric condition of the tongue in which the organ is tender and swollen, and covered with a thin layer of lymph of a whitish or grayish color, the gums, cheeks, and lips, and roof of the mouth occasionally participating in the deposit, a condition that he states is sometimes seen in cases of mercurial salivation. The element of glossitis was not well developed in the cases described by Gross, and I do not think they could be compared to the case here described.

The local treatment by free incisions, which is recognized as most serviceable in cases of glossitis, acted most satisfactorily in this case, which could hardly have been expected to be of service if the diphtheric infection was the primary cause of the glossitis.

112 South Eighteenth Street.

A CASE OF DEPRESSED FRACTURE OF THE SKULL IN A BOY, WITH PROFUSE HEMORRHAGE; OPERATION AND RECOVERY.

By J. HOOD OWINGS, M.D.,
of Deer Lodge, Mont.

I was summoned late in the afternoon of May 6, 1894, to go fifty miles to see Walter W., aged ten years, who had been thrown from his horse, dragged some distance, and kicked in the head; the accident having occurred about 5 P.M. on the afternoon of May 5th.

Arriving at the place of destination about 3 A.M. on the morning of the 7th, I found the lad in a semi-conscious condition, with a large contusion and a vertical scalp-wound very sensitive to the touch back of the left ear. His pulse was 125, the temperature 97°, the respirations 26 per minute, the pupils dilated, and with partial paralysis of the bladder and lower extremities. As I could obtain but scant lamplight, and there seemed to be no immediate danger, I concluded to await daylight.

At 8 A.M., everything being in readiness, ether-anesthesia was obtained, and I found that a large area of the skull was greatly depressed. The scalp being shaved, the vertical incision was extended to about two-and-a-half inches in length, and a horizontal one made over the central portion of the contusion at right angles to the former and two-and-a-half inches long. The periosteum was removed with a raspatory, exposing an extensive irregular comminuted fracture composed of five pieces, and beginning just posterior to the junction of the middle of the concha of the ear with the scalp, and extending backward and upward for a distance of about two inches.

By the use of the elevator and sequestrum-forceps four pieces lying furthest from the ear were removed without any difficulty and with no untoward event. But when a piece lying close to the ear was removed there was a sudden and alarming gush of dark blood, which could only be staunched by keeping the finger pressed against the dura.

So great was the hemorrhage that it was impossible to tell whether the sharp bone had injured the brain-substance or simply cut into one of the sinuses of the dura.

In a few moments I was informed by an attendant that the pulse at the wrist had ceased to beat. I at once had given hypodermically strychnin, gr. $\frac{1}{60}$, glonoin, gr. $\frac{1}{100}$, and followed by ♏60 of old brandy. Meanwhile the wound was examined carefully for any débris, and thoroughly irrigated with warm mercuric-chlorid solution, 1 : 4000.

A compress made of sublimate-gauze five-eighths of an inch in width was placed over the injury to the dura, and held firmly a few moments, and then a second compress, somewhat larger, of the same material against the first, with the end left so as to protrude and afford drainage. The periosteum was now stitched together with catgut and the scalp with iron-dyed silk. Iodoform-dressings were applied externally and the head bandaged.

There being feeble pulsation at the wrist, the patient was now put to bed and hot-water bottles were applied. As soon as the little sufferer became conscious he complained of considerable pain, and was given one-eighth of a grain of morphin hypodermically; he then went to sleep and slept for three hours.

At 9 o'clock P.M. the child was awake and perfectly conscious; had voided urine; the pulse was 110, the temperature 99°, the respirations 20 per minute. He took a glass of warm milk and was given ten grains of sulfonal. On May 8th the child had had a fairly good night, had taken beef-tea and milk, had voided urine, and his temperature was 99.5° and his pulse 100. On the third day the dressings were changed and one piece of gauze was removed. The remainder of the gauze packing was gradually removed in a few days. There was some sloughing of the scalp, but healthy granulation took place and an uninterrupted recovery followed.

THERAPEUTIC NOTE.

CREOSOTE-ADMINISTRATION.

BY CHARLES WILSON INGRAHAM, M.D.,
OF BINGHAMTON, N. Y.

IN creosote we have a remedy productive of much good or a substance utterly worthless and even harmful. To-day it is the one, and to-morrow it is the other; but, as a rule, in either instance it is the physician or pharmacist and not the remedy that is at fault. Pure creosote, properly and systematically administered, is without doubt one of the most reliable and standard remedies in the entire pharmacopeia; and failure in its use is due to failure on the part of the physician to specify in his prescriptions the product of reliable chemists, and, further, to prescribe a proper method of administration. A pure beechwood-creosote administered in a proper way, as a rule, gives most successful results, while with a preparation, either good or poor, but improperly administered, failure and disaster will certainly attend our efforts.

Being a firm believer in the value of creosote in the treatment of a variety of morbid conditions, I naturally met with all the difficulties that attend the prescribing of this drug by those not familiar with its use, and after many failures and a few good effects, the questions arose in my mind, and particularly in cases of pulmonary disease, Does the benefit warrant the effort? Does a patient suffering from a chronic pulmonary affection, tuberculous or non-tuberculous, obtain from the ingestion and assimilation of medicinal quantities of creosote sufficient benefit, local or constitutional, to risk all the possible evil effects that occur in a certain percentage of cases? The experiences of physicians differ more radically upon this question than perhaps upon any other therapeutic agent, and many unfavorable opinions are often based upon experiences of a few disastrous cases in which the creosote itself was not in reality at fault.

Of all preparations of creosote for internal administration, the pill-form is probably the most inert, not to say harmful, for there is seldom sufficient creosote in the largest-sized pills to occasion any of its typical irritant effects. Although this mode is probably the most agreeable to the patient, and, for the reasons stated, more likely to be tolerated, the pill is absolutely valueless, except, perhaps, to correct some functional gastric disorder. Many patients, laboring under the delusion that they are taking creosote, persist in taking these pills to the advantage of no one but the druggist and the manufacturing chemist.

Next to the pill-form comes the capsule-method, which, I am safe to say, is far more effective than the pill-form; it has, however, certain disadvantages that render it far from being a perfect mode, and far from being satisfactory in cases of pulmonary disease. The amount of the vehicle is necessarily limited, and as the gelatin dissolves it brings a strong mixture of creosote in direct contact with the delicate mucous lining of the stomach. As a rule, the capsule-mass is so strong as to be caustic, and as it comes in contact with the gastric mucous membrane it occasions in many an unbearable burning sensation. While the capsule-form is preferable to the pill-form, it does not approach by a long way the goal of reasonable perfection. I do not wish to be understood as giving the impression that the capsule-method is wholly without value, because in some cases it answers the purpose, particularly when large doses are not required and when the administration is not to be long continued.

In creosote carbonate we have an agreeable, pleasant, and, to a certain extent, effective preparation; and while the results that I have obtained from this preparation have fallen short of my expectations, I still believe it has sufficient value to warrant its trial in cases in which other methods of exhibition have failed. It is non-irritant, non-caustic, and can be taken clear without unpleasant after-effects—certainly a very agreeable and desirable property. While its introducers claim that extremely large doses (children, from fifteen to ninety grains; adults, from one to four drams) can be taken without unpleasant effects, I have, however, had reason to regret the exhibition of heavy doses, as in two instances doses of thirty grains caused serious depression in adults, which continued for several hours. In justification of the preparation, however, I am bound to say that, as a rule, doses of from twenty to forty grains to adults are well tolerated; and as the preparation is claimed to contain over 90 per cent. of beechwood-creosote, creosote carbonate certainly offers a medium for the administration of larger doses than by any other known method. Still, it is a question as to whether from twenty to forty grains of creosote carbonate equal from three to six grains of pure beechwood-creosote.

It is a well-known fact that creosote is soluble in alcohol to a certain extent, and, by virtue of this fact, it will form a perfectly clear solution in whisky. The great drawback, however, to this solution is the fact that it will not bear dilution, the mixture being instantly decomposed by the addition of water, a fact that deprives the method of all value.

It is claimed on good authority that tincture of Panama wood (*Quillaia saponaria*), in the proportion of eight parts to one of creosote, will form a permanent solution and one that can be diluted with tepid water without decomposition—which is due to the presence of saponin. In this form creosote, is said to retain its efficacy and is well tolerated. I have had no experience with this method because of the difficulty in obtaining the tincture of Panama wood.

Three years ago I adopted a method of administering creosote that has given me such satisfaction as to be worthy of general consideration. The results could not be bettered, as regards tolerance, assimilation, non-irritation, and desirable effects upon the general system, and they excel those of any other method I have ever used.

In the first place, it may be well to say that I believe my results are to a great extent due to the splendid preparation of beechwood-creosote (Merck's) which it has been my good fortune to obtain. In appearance it is as clear as water, and in quality approaches more nearly the standard of purity than any other preparation known to me.

I give the patient a one-ounce bottle of this creosote and an empty eight-ounce bottle. Upon the eight-ounce bottle I place the following label:

"*Directions:* After putting in the correct number of drops, according to directions on the small bottle, fill with cold water and take the entire contents of the bottle during the day, in equally divided doses, at regular intervals. Make at least six or eight doses. Shake thoroughly each time before taking."

Upon the bottle of creosote this label is pasted:

"Put four drops in the eight-ounce bottle, and take according to the directions on that bottle. The second day put in five drops, and the third day put in six drops, etc. Continue to increase one drop per day, until twenty-four drops are taken daily. Do not increase beyond twenty-four drops without instructions."

One ounce of creosote will last the patient a full month at the beginning, but after the first month two ounces will be taken each month.

Creosote in this form may be intrusted to the care of any intelligent adult, and I have never had an accident occur from the method. As the daily amount reaches from twelve to fifteen drops, it will require further dilution. The dose can be emptied into a glass tumbler and a sufficient additional quantity of water quickly added. By this method the patient has a fresh preparation daily, and when taken in this highly diluted aqueous suspension it is wholly non-irritant to the mucous membrane of the mouth, throat, or stomach. When desirable a small amount of some one of the vegetable bitters may be added each morning to the eight-ounce bottle, which will assist in stimulating the appetite.

By commencing at the minimum dose, one-half drop (eight doses per day), and systematically increasing the daily quantity one drop per day, twenty-four drops can be taken at the end of three weeks with, in nine cases out of ten, no difficulty whatever. In a few cases I have increased the daily amount to thirty-five drops without gastric or renal disturbance. By this method a tolerance is established, and a maximum dose may be maintained indefinitely in a majority of cases so far as any unpleasant symptoms are concerned.

As to just what benefit is derived from creosote-administration in cases of subacute and chronic pulmonary diseases, the question is not in the scope of this paper; but as so many physicians place their chief reliance upon this remedy in the belief that it stimulates the appetite, increases and sustains the nutritive processes, controls pus-formation, and thereby increases the general vital forces or resisting powers, my suggestions will, I believe, meet with a certain amount of approval.

MEDICAL PROGRESS.

Successful Celiotomy for Perforation of the Gall-bladder in the Sequence of Typhoid Fever.—MONIER-WILLIAMS and SHIELDS (*Lancet*, No. 3731, p. 534) have reported the case of a woman, thirty-one years old, who, on the eleventh day of an attack of typhoid fever, was suddenly seized with acute abdominal pain associated with symptoms of collapse. The possibility of perforation of the intestine was considered and appropriate treatment instituted. The gravity of the condition subsided in the course of a few days. During the fourth week the temperature gradually fell by lysis, finally reaching the normal, where it remained for nearly two weeks. In the sixth week the patient experienced some slight abdominal pain, which gradually increased in intensity and became associated with tenderness referred to the region of the hepatic flexure of the colon. The temperature again rose, and dulness on percussion was found in an area about the size of an orange in the region mentioned. The patient grew progressively worse and signs of localized peritonitis in the right hypochondrium appeared.

After mature consideration operation was decided upon. Upon opening the abdominal cavity it was at once obvious that the most acute focus of inflammation was situated in the right hypochondriac region. The intestines were distended, red, and congested, and covered with purulent lymph, while among their coils some free turbid fluid could be seen posteriorly. There was much purulent lymph matting the tissues together beneath the liver. While disentangling the adhesions and sponging away the soft lymph under the liver the gall-bladder came into view and was seen to be deeply inflamed, of a dark-plum color, rigid, thickened and adherent. It was tightly distended, but not much enlarged. Low down, near the neck of the gall-bladder, was a sharply circular, sloughing ulcer of considerable size. Its floor was yellow, and it was surrounded by a vivid red zone of intense hyperemia. On stroking it with a probe, fluid escaped at one point, showing that leakage of the contents had already occurred. A fine trocar was introduced, but no fluid escaped, and the gall-bladder was opened at its fundus with scissors. About an ounce-and-a-half of thick and offensive pus, unmixed with bile, was evacuated into a glass held in the abdominal cavity, sponges being packed around to prevent contamination of the peritoneum. The gall-bladder appeared to be converted into a suppurating sac, probably cut off from communication with the biliary flow. The viscus was cleaned out with pledgets of wool held in forceps and a careful search made for a calculus by a probe internally and the finger externally, but no foreign body could be detected; nor could it be discovered to what the closure of the cystic duct was due. The tissues were so disorganized that attempts to pass a probe into the common duct were not persisted in.

It was impossible to close the opening in the neck of the gall-bladder by means of Lembert sutures, and it was not deemed practicable to do anything with the gall-bladder, still less to bring it to the surface of the abdominal wound. The wound in the fundus was, therefore, attached to the parietal peritoneum, and the portions under the liver were cleansed by flushing with warm water and repeated sponging. A horizontal incision at right-angles to the first was made to facilitate drainage. To permit of the return of the bowel a fine trocar was introduced obliquely into the enormously distended ascending colon, passing for some distance along the longitudinal bands before perforating the mucous membrane. A large quantity of flatus escaped, aided by manipulation of the intestine. A glass tube was passed deeply into the lesser cavity of the peritoneum, and a long and liberal strip of carbolized gauze firmly packed around it, so as to flatten the empty gall-bladder against the under surface of the liver and shut off the intestine from contact.

The abdominal wound was closed with fishing-gut sutures and varnished over with collodion, finally being covered with a cyanid dressing. The operation occupied an hour, and at its conclusion the condition of the patient was satisfactory. The woman afterward suffered somewhat from collapse, with vomiting. For several days nutrient enemata were given. There was little discharge from the wound, and the glass tube was in time replaced by a rubber one. For a few days severe colicky pain in the right hypochondrium was experienced. The woman recovered perfectly, only a small suture-sinus remaining.

Amputation of the Entire Upper Extremity (Including the Clavicle and Scapula) for Sarcoma Following Fracture of the Clavicle.—At a recent meeting of the Philadelphia Academy of Surgery Dr. W. W. KEEN reported the case of a man, aged twenty-one years, who had broken his left collar-bone by a fall some nineteen months previously. Eleven months later a tumor appeared at this point, which, together with one-and-a-half inches of the clavicle, was soon afterward removed. The neoplasm, however, immediately reappeared, and grew rapidly. For a month the patient was treated with the toxins of erysipelas and prodigiosus, but without obvious benefit. He presented a large tumor extending from the shoulder to the base of the neck and attached to both clavicle and scapula, and reaching to within two inches of the inner end of the clavicle. The growth did not appear to be infiltrating, but encapsulated. It seemed to be very movable with the shoulder, and there was not the slightest edema of the arm.

The tumor was ulcerated at two points, and the skin was branny and thick. An incision was made at the inner border of the tumor with its center at the clavicle and another at a right-angle along the line of the clavicle down to the bone. Flaps were dissected and the tumor drawn away so as to uncover as much of the clavicle as possible, and two-and-a-half inches of the inner end of the clavicle removed. The vessels were readily dissected loose and followed down to the upper border of the pectoralis minor. At no point were the tissues under the great pectoral involved. In order to tie the vessels at so low a point the vertical incision had been gradually extended nearly to the axilla, and having secured the vessels the amputation was proceeded with. As the removal of the tumor would remove also so large a portion of the skin that it would be impossible to approximate the edges, the incision on the arm was carried nearly down to the elbow, and a flap of healthy skin from the inside of the arm was dissected and turned upward so that the lowest end near the elbow became the highest when turned upward on the neck. In dissecting the arm loose the larger part of both the pectoral muscles was removed, and a number of smaller vessels were ligated. The posterior incision was now made, cutting as wide of the tumor as was possible, the incision passing nearly along the posterior border of the scapula. The separation of the extremity was readily effected, and a moderate number of vessels ligated. After renewed disinfection of the large surface it was closed. The elbow-flap was turned upward on the neck and the entire raw surface was covered with skin without tension. At four points between the stitches small portions of iodoform-gauze were inserted to act as drains.

The patient was put to bed with apparently little shock, his temperature being 97.6°, though the operation had lasted nearly two hours. His recovery was rapid and satisfactory, the temperature rising only once to over 100°. On the sixth day he was out of bed. A small portion of the posterior edge of the flap from the arm sloughed. But for this he would have been entirely well within ten days.

Puncture of the Base of the Brain, with Loss of Memory.—ABEL and COLMAN (*British Medical Journal*, No. 1781, p. 356) have reported the case of a railway-fireman, thirty-six years old, who, while carrying an oil-feeder in his hand, slipped and fell forward, the spout of the can being driven forcibly into his face. There was transitory loss of consciousness, followed by twitching and jerking-movements of the limbs, most marked on the left side, the legs being drawn up and the body bent forward. There was no hemorrhage from mouth, nose, or ears. The metallic spout of the oil-can was firmly fixed in the base of the skull, and was only removed from the grasp of the bone by firm traction with forceps. It had passed upward and toward the middle line, with its concavity directed from the middle line. Its end was firmly plugged by bone from the base of the skull. No hemorrhage followed its removal. The wound was cleansed and a simple iodoform-dressing applied. The violent jerking-movements were replaced by a few occasional twitchings. It was now found that the left side of the face and the left arm were paralyzed, with inability to close the left eye completely. The man became drowsy and confused, and was unable to give replies to any but the simplest questions. The temperature rose to 102°; the pupils became contracted, the right in a greater degree than the left; both reacted to light. The left leg began to lose power. There was complete anesthesia of the right eyebrow and of both eyelids and of the right cheek for an uncertain distance below the lower eyelid. The conjunctiva of the right eye became congested, and a small ulcer formed on the right cornea, which healed without much trouble. In the course of a few days power began to return, first in the left leg and afterward, though to a much less extent, in the left arm. For two weeks there was drowsiness, and the man slept considerably. He was apathetic, and for many days passed urine in bed. He could not recognize his wife or old comrades, and had also difficulty in recognizing common objects and their uses. The most remarkable feature was the loss of all memory of his life for twenty years before the accident. As time went on, the period included in this loss of memory was reduced to five years preceding the accident. The hemiplegia persisted, although the man was able to get about. Sensibility was lost to all forms of stimuli in the right upper eyelid, forehead, and anterior part of the scalp, corresponding with the distribution of the supra-orbital and nasal nerves. The cornea was completely anesthetic, and the right cheek an inch-and-a-half external to the angle of the nose presented a small patch of anesthesia. There was undue emotional mobility, the patient laughing or crying on slight provocation. The condition of mind-blindness remained. It is believed that the spout of the oil-can must have passed under the zygoma to the base of the skull, perforating the great wing of the sphenoid bone and penetrating the centrum ovale, injuring the anterior fibers of the motor tract in the internal capsule near the genu.

Uremic and Dropsical Coma.—In an interesting article in the *Asclepiad*, second quarter, 1894–'95, p. 113, SIR BENJAMIN WARD RICHARDSON divides cases presenting disease of the kidney leading to suppression of urine into three classes: First, those in which there is acute uremic coma occurring suddenly without dropsical exudation, and in which the coma is deep, the breathing stertorous, the muscles restless or convulsed, and the eyeballs move from side to side or upward and downward, or obliquely, symptoms the same as those which can be synthetically induced by the introduction of urea into a healthy organism. The temperature is likely to be slightly above the normal. These, it is assumed, depend on diffusion of urea, in a comparatively concentrated form, through the system, so that true toxic action is acutely developed. In cases of this group bloodletting is of distinct value, and should not be prohibited even by an unfavorable pulse. The second class includes cases in which coma appears with dropsical symptoms—edema, ascites, or pleural effusion. The symptoms seem to depend on free diffusion of urea through the system, but with a considerable amount of watery, fluid serum. The tendency is for the temperature to be slightly below normal. In these cases bloodletting, while indicated, seems to give only relief and no more. In the third group belong the cases in which, with universal dropsy, there are comatose conditions not amounting to deep coma, and in which the drawing off of fluid from the cavities of the chest or abdomen, or from the cellular tissue, relieves the symptoms, dissipates the coma, and gives for a time a new lease of life. The condition appears to be a widely spread dropsy, in which urea, if it be accumulated at all, is so extremely attenuated with water that its toxic effects are not manifested, but the pressure produced by the effused serum tells upon the central nervous system and gives rise to the semi-comatose condition. The temperature is usually below normal. When these symptoms are prolonged the cases are commonly designated as those of chronic dropsy. In the cases of this class bleeding would be capable of no real service; here the artificial removal of the fluid by tapping is indicated.

Placenta Prœvia with Twin Pregnancy.—PALCHOWSKY (*Centralblatt für Gynäkologie*, 1895, No. 8, p. 213) has reported the case of a woman, thirty years old, who, in the seventh month of her eighth pregnancy, had a copious uterine hemorrhage. Examination disclosed the existence of twin pregnancy with placenta prævia; one fetus presenting by the vertex and one by the pelvis. Dilatation of the os uteri proceeded slowly until it was possible with the fingers to displace the head of the first child laterally and effect podalic version, and extract the child. The pelvic presentation of the second child became converted into a transverse position. Podalic version was again resorted to, and the child successfully extracted. The hemorrhage at once ceased. The children were asphyctic, and one less well developed than the other. The placenta of the first was expelled after the lapse of ten minutes; the portion situated at the os was filled with thrombi and infarcts. The second placenta was removed after the lapse of two-and-a-half hours. The central portion was firmly adherent to the uterine wall. One of the children died an hour and the other two-and-a-half hours after birth. The puerperium was uncomplicated.

Traumatic Rupture of the Stomach.—LAURENCIN (*Lyon Médical*, 1895, No. 4, p. 110) has reported the case of a man, sixty years old, who in dismounting from a heavily laden wagon which he was driving, in order to secure his hat, which had blown off his head, frightened the horse and was run over by two of the wheels, which passed over the abdomen obliquely in a line from the left iliac crest to the right false ribs. The man was able to arise, and succeeded in getting to his room, and was subsequently transported to the hospital, where, three hours after the accident, he partook of a considerable quantity of soup. He presented several ecchymoses, but no broken or displaced bones could be found, and there was little complaint of spontaneous pain. The action of the heart was feeble and rapid, but regular, and the pulse was scarcely perceptible. Notwithstanding the absence of grave symptoms, death took place eight hours after the accident. Upon post-mortem examination a somewhat transverse rupture of the stomach three inches long, and involving the anterior aspect of the viscus in the neighborhood of the lesser curvature, was found, the contents of the organ having passed into the peritoneal cavity.

Bacteriologic Examinations in Diphtheria. — SILBERSCHMIDT (*Münchener medicinische Wochenschrift*, 1895, No. 9, p. 185) has reported the results of bacteriologic examinations in one-hundred-and-twenty-five cases of diphtheria. Typical diphtheria-bacilli were found in ninety-one cases, but in only one case associated with other micro-organisms. In the remainder, principally staphylococci and streptococci were found. An investigation was also made of the throats of children treated with the antitoxin. In these diphtheria-bacilli were found as late as thirty-two days after the injection. The number of bacilli was, as a rule, distinctly diminished several days after an injection. In six cases in which the examination was made it was found that the bacilli present after injections with the antitoxin preserved their virulence.

The Vitality of Cholera-bacilli in Fecal Matter.—ABEL and CLAUSSEN (*Centralblatt für Bakteriologie und Parasitenkunde*, Band xvii, Nos. 3 and 4, p. 118) have found that cholera-bacilli disappear from fecal matter, as a rule, within twenty days, though rarely they may be observed for thirty. Their continuance for a longer period is exceptional. In some instances the organisms cannot be distinguished after the lapse of two or three days, so that examination of the stools for diagnostic purposes should be made as soon after their evacuation as possible. In many cases a positive result should be obtained if to from 2 to 20 c.c. of fecal matter from five to ten times as much of peptone-solution are added, and peptone tube-cultures are made from the surface after the lapse of twenty hours.

Thirteen Cases of Hereditary Ataxia in a Single Family.—NEFF (*American Journal of Insanity*, January, 1895) has reported thirteen cases of ataxia in adults in four generations of one family, with a distinct hereditary history. All of the cases were characterized by a marked similarity of the symptoms. In all of the cases but two the onset was observed between the ages of fifty and sixty-five, and of these two the first symptom was noted in the one at the age of sixty-two, and in the other at the age of sixty-eight. In four of the cases insanity also developed, assuming the form of dementia, and differing in degree and corresponding to the dementia resulting from organic brain-disease.

THERAPEUTIC NOTES.

Successful Employment of Bone-marrow in a Case of Pernicious Anemia with Arsenical Palsy.—BARRS (*British Medical Journal*, No. 1781, p. 358) has reported a case of pernicious anemia in a miner, forty-three years old, who appeared to be at the point of death, so that arsenic was given in increasing doses. The largest dose reached was nineteen minims, and the largest quantity taken in any twenty-four hours was seventy-five minims. As a result a peripheral neuritis developed, while the condition of the patient failed otherwise to improve. The administration of fresh bone-marrow, three ounces a day, was now begun, and in a short time the appearance of the man became much improved, while the number of red corpuscles and the proportion of hemoglobin progressively increased, finally reaching the normal. The general condition improved in a corresponding degree, although the palsy due to the neuritis persisted.

The marrow was prepared by mixing three ounces into a paste with an ounce of port-wine, an ounce of glycerin, and five drams of gelatin. The gelatin was soaked in sufficient water to soften it, and then mixed with the glycerin, the mixture being kept in a mortar previously made hot with boiling water, while in another mortar made hot in a similar manner the marrow and wine were mixed. Finally, the contents of the two mortars were thoroughly incorporated and allowed to set.

Disinfection with Iodin.—SIR BENJAMIN WARD RICHARDSON (*Asclepiad*, second quarter, 1894–'95, p. 157) recommends iodin as a useful disinfectant, which may be used as a solution in spirit, in which rags are dipped and then suspended in the room to be disinfected; or the substance may be employed in the solid form, or in extreme cases in the form of vapor. Used in the solid form, a dram may be placed in a cup, glass vessel, or common chip-box, which is covered with a piece of gauze or muslin. The substance soon diffuses through the air of the apartment, which it thoroughly disinfects if organic matter be present. When rapid disinfection is desired the iodin may be placed on a porcelain or a common plate or saucer, and the heat of a candle applied beneath. The vapor of iodin appears to produce little effect on gilded or metallic surfaces, but it stains marble or white painted surfaces when it comes directly in contact with them. It is essential that the ventilation be not neglected in using iodin as a disinfectant. The substance may also be successfully used when the breath is fetid, being carefully inhaled from a small bottle, and avoiding dryness or soreness of the nostrils or throat. It also makes a useful application to fetid and indolent ulcers and sores. For this purpose it may be placed in a chip-box beneath the bed-clothes.

The Treatment of Diphtheria.—SIEGERT (*Therapeutische Monatshefte*, 1895, No. 3, p. 118) details the method of treating diphtheria employed at the Children's Clinic of the University of Strassburg. The local measures consist in the application of cold in the form of an ice-collar, in the administration of bits of ice, in the solution of the membrane by means of applications of a ten per cent. solution of papayotin repeated at intervals of from five minutes to two hours. Sometimes to the last a five per cent. solution of carbolic acid is added. The air of the apartment is impregnated with a spray of 7½ parts of sodium chlorid, 250 parts of glycerin, and 750 parts of distilled water. Tracheotomy is resorted to when simpler measures do not suffice to relieve laryngeal obstruction. Constitutionally, over-feeding is enforced, the temperature is sustained, and internal medication is avoided so far as possible. In this way, during a period of five years, the mortality among 658 cases was 32.5 per cent.; among 397 requiring tracheotomy, 34.3 per cent.; among the remainder, 261, 14.6 per cent.

The Treatment of Exophthalmic Goitre with Thymus Gland.—OWEN (*British Medical Journal*, No. 1781, p. 361) has reported a case of exophthalmic goitre of twenty years' duration in which distinct relief followed the administration of what was believed to be thyroid gland, but which upon investigation proved to be thymus. On discontinuance of the gland the symptoms began to reappear, and relief again followed the resumption of treatment. One lobe of the cervical portion of the thymus was given three or four times a week.

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QUESTIONS OF NOMENCLATURE.

CRITICISM has lately been made concerning the use or abuse of certain medical terms, and the subject is one that is always most pertinent. There is, of course, a danger of losing the thing in too intense attention as to the method. "Brisk little somebodies critic and whippersnapper, in a rage to set things right" are perhaps altogether too numerous, but the desire to use language accurately is entirely proper. Even if one has not much to say, the saying it rightly will win attention when the possibly more important thing will be ignored because of obscurity or inaccuracy of expression.

The great advance in scientific knowledge and in precision as regards the etiology and pathology of disease have been and will long remain the chief factors in rendering absurd much of the older nomenclature and in necessitating constant changes in order that our naming of things shall keep pace with our better knowledge of them. The more accurate name is in itself a decided factor of progress, because it necessarily carries knowledge with it. "Phthisis" (or "consumption") is but one symptom of many diseases, so that to use it as a synonym of but one disease, "pulmonary tuberculosis," is of itself a false statement. But besides this the two older terms tell the learner nothing about the morbid process, except the symptom of wasting, or emaciation, whilst the term pulmonary tuberculosis locates the chief seat of the lesion and states what is its nature. So it is with "Bright's disease," instead of "nephritis," and so it is with almost every disease that has been called by a man's name. We should therefore seek to stop this habit so far, at least, as diseases are concerned. There are something like two-hundred of these eponymic diseases, some having been called after as many as half-a-dozen or more different physicians.

In not a few instances, such as Addison's disease, the eponymic custom must obtain, because we do not know yet enough about the diseases to give them a suitable name.

In reference to other things this rule will not hold, and we do not see any strong objection to the eponymic habit. When, for example, we wish to speak of the pupillary reflex called after Robertson, of the treatments called Credé's or Sylvester's, of the test called Moore's, of the symptoms called Romberg's, of the method of staining called Fraenkel's, or of the experiment called Scheiner's, one sees no objection to naming them thus, and many are the reasons for it. The terms are much shorter than any conceivable circumlocutions, and the discoverer may thus be given the proper honor with no detriment to medicine and with no unnecessary labor for medical students. As to operations and tests, one hardly sees how we could do without the method, as any one of the many hundreds of such names saves possibly a page or more of most tedious circumlocution. In some cases we would be glad to have an eponymic designation for a more roundabout or equally non-descriptive designation. What, for example, is more absurd than to call "the patellar-tendon reflex" a "knee-jerk," the "knee," of course, not "jerking" at all. To call it, *e. g.*, Charcot's reflex or Brown's kick would be almost as descriptive, and somewhat shorter than "the patellar-tendon reflex"—a term that is also to some extent a misnomer.

All things considered, therefore, we would recommend the abandonment of eponymism as regards diseases, and would advise giving diseases more accurately descriptive or scientific names. In the case of signs and symptoms of disease, of operations, of tests, of stains and bacteriologic methods, of methods of treatment, etc., the plan of using the discoverers' names to designate them has usually decided advantages, and when a shorter or more scientifically descriptive term cannot be found, personal nomenclature should be encouraged, as well to honor the discoverer as to aid all aftercomers in their philologic studies.[1]

Medicine illustrates even more than Law how difficult it is for the modern civilized world to slough the old medieval Latin snake skin. This is exemplified especially in the titles of articles and the names of diseases. Sometimes the limit of the ridiculous is reached when in such titles one finds a sandwich of English and Latin in disjointed jumble. A fellow starts off with a pompous Latin title, let us say, *otitis media purulenta*—and then his Latin gives out, and for awhile he again turns to English—*with coincident closure of the* (and down comes the rest of the Latin sandwich) *meatus externus!*

Isn't it about time to quit dragging about after us this half-sloughed medieval mummery? There are no ideas that cannot be expressed in healthy modern virile English. Scientific men do not need and should not wish to dress themselves or their ideas up in the cast-off petticoats and dead languages of passed ages. Even in our prescriptions the arguments for the retention of Latin are musty and dusty. It is said that we must not let the patient know what he is taking; but that is another way of saying that we must wrap ourselves up in mystery and conceit. If our real desire were to keep the patient in ignorance, the chemic formulæ would answer the purpose much better than our so-called Latin. Another excuse is that Latin, being a universal language, our prescriptions will be better understood in Europe; but every really educated man is aware that the average European druggist knows English much better than the average American doctor knows Latin.

Medical language has a somewhat fatalistic tendency to philologic barbarism that healthy modern minds should withstand. No science is so given to absurdities of nomenclature. Even a much-used synonym of physicians is philologically more than outlandish. The French have a word *praticien* for one who practices, *e. g.*, the law, and we have the same word in medical English, unused, but properly formed—*practician.* With megalosaurean wit we devise and use the linguistic outrage, *practitioner.* With just as much reason should we say *academicianer*, or *dentistianer.* A practicer is, of course, one who practices; a practitioner, therefore, must be one who practitions!

In ophthalmology there are a number of terms much used and improperly used. The Greek word, ὀφθαλμός, names the whole eye, but we persist in using ophthalmia for localized affections of the conjunctiva. Let us say conjunctivitis instead of ophthalmia, conjunctivitis neonatorum, or conjunctivitis of the newborn, instead of ophthalmia neonatorum. "Purulent conjunctivitis of the newborn" has a footstep as heavy as that of the giant Fafner. *Eye-ground* is for several reasons preferable to *fundus oculi.* Even if there were no other *fundi* to confound, the English is better than the Latin. In the same way the whole fussy botheration over *nyctalopia* and *hemeralopia* would have been avoided by the frank old Anglo Saxon terms, *night-blindness* and *day-blindness.* The desire for an odd name, for a mysterious one, or for a polysyllabic monstrosity, is accountable for many words that make us laugh. Some uses of the words *refract*, *refraction*, and *refractionist* have been lately criticised, but their critics are hypercritical, and the convenience, nay, necessity of the words will keep them very much and very long active. Likewise when there is discovered a drug that is a "cycloplegic" and not a "mydriatic," we may consent to unlearn the commonly used word and emphasize the distinction.

One of the greatest needs of reform is in chemic nomenclature. *Hydrogen dioxid*, *carbon dioxid*, *mercuric chlorid*, etc., should be substituted for the old-fashioned *peroxide of hydrogen*, *carbonic acid*, and *bichloride of mercury* or *corrosive sublimate.* The modern scientific name of "carbolic acid" is *phenol*, and of "glycerin" *glycerol.*

There are three roots with their compounds over which the linguistic battle will long endure. The dictionaries usually continue to spell them one way (though the word-men are not by any means of a common mind), while we pronounce, and, indeed, usually write them, another. Etymologically, of course, *chorio-*, *thyreo-*, and *angeio-*, are correct; but we all speak of the *choroid*, the *thyroid*, and we not seldom write *angioma.*[1] Shall our preaching and our practice be allowed thus forever to contradict each other? We have repeatedly intimated in these columns that as applied to medicine the stickler for etymologic accuracy has a woful hard row to hoe.[1] The convenience of the instrument-user, accuracy of expression, and conciseness—these must necessarily be our guides in the use of the instrument, language, rather than any fetich-worship of it. Despite all our conservatism and reverence for "the good old forms," words and language will change, and all the King's (English) horses and all the King's (etymologic) men cannot make Humpty-Dumpty what he was again. Old words will die and new ones will be born, and here, as well as over birth and death everywhere, we have little volitional control. The part of wisdom is to follow willingly where willy-nilly we must go, rather than be dragged thither.

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[1] Strange whims characterize us, however, sometimes. A man is named Argyll Robertson, and when we name a phenomenon after him we keep the first name—most uselessly and cumbersomely. In all other cases we dispense with the first names. Why is not *Robertson's pupil* sufficient also?

[1] *Aneurysm*, though etymologically preferable to *aneurism*, is usually written in the latter manner. As one form is not shorter than the other, no real principle is at stake, and one may follow the crowd if he will.

The use of the hyphen is a stumbling-block to many writers. We think it should be used in compound words when the two words joined would be complete words if standing alone, the compound being used as a single idea or term. Such compounds are, *e. g.*, *throat-symptom*, *joint-cavity*, *bone-chips*, *wound-edges*, *tissue-proliferation*, *iodoform-gauze*, *pus-microbes*, etc. The hyphen does not seem to us to be needed when only a root-form makes a part of the compound that is not a completely formed word when standing alone. The parts in such cases should not be separated by a hyphen, but should be fused into a single word. Such words are: *antitoxin* (not *anti-toxin*), *osteomyelitis*, *urethrovaginal*, *coexisting*, *hematosalpinx*, *hemotherapy*, *thyrohyoid*, etc. In the same way the dieresis may be omitted. It is but a relic of a childish time, when it was supposed that diacritic marks were necessary or that they could teach pronunciation.

HEREDITY AS A FACTOR IN DISEASE.

In former years heredity was considered a most important factor in causing disease. It was held that, without a doubt, insanity, epilepsy, gout, tuberculosis, syphilis, leprosy, carcinoma, and hysteria were inherited diseases, and for a long time physicians were satisfied with such an explanation. It is not necessary for us to quote authorities in support of this fact; literature is filled with the record of these beliefs, and to a large extent the practice of to-day is still governed by them.

But a change is going on in our philosophy; and a most hopeful change it is. When Lamarck stated that an organism was influenced by its environment and that it would transmit to its progeny the result of this influence, and that, imperceptibly, structure would become altered by the accumulation of changes handed down from individual to individual, this theory was adopted to explain the evolution of things. Then Darwin advanced natural selection and the law of variation as being prominent factors in evolution, and made more use of, than the law of Lamarck. Later specialists have shown that, if an organism is affected by its environment, it will take a long time before such change in structure becomes permanently fixed so that it is inheritable. In other words, the same conditions must act upon a vast number of generations before it can be transmissible. And now a German naturalist, Weissmann, holds that acquired characters are not inherited, at least not in such complex organisms as man and the higher animals. The Neo-Darwinians, as they are called, find sufficient cause in the fact of natural selection and in the mixture of germ-plasmas to account for such phenomena as were formerly explained by the theories of accumulated inheritance.

In medicine, however, the wildest ideas have been accepted as truths. Because father and son were affected with the same disease the disease was considered inherited. Even mutilations of newly born children were ascribed to prenatal causes affecting the mother.

What mother of a hare-lipped child has not traced this malformation to the sight (possibly in a confectioner's shop) of a hare? What "strawberry-marked" child has not had a mother who, during the time she carried him, had a predilection for strawberries? While no sensible medical man holds such views to-day, yet others almost as unwarranted are entertained about the inheritance of diseases.

The germ-theory of disease has thrown down some of the bulwarks behind which we were wont to defend our ignorance. And though we at once put up another wall frailer than the former, and call it predisposition, we are obliged to look for other causes, and the burden of proof rests upon us.

Take, for instance, the question of tuberculosis. So widespread has this disease been that we doubt if any family can be said to be truly exempt; either through marriage or blood every one of us must have some tuberculous taint within us, if this taint is inherited; and if this be true, how absurd to speak of inheritance or predisposition in one case and not in another.

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[1] Illustrated by the noteworthy defence of *uranalysis*, by our excellent contemporary, the New York Medical Journal—a defence as regrettable as the thing defended.

Again, if diseases which are acquired during the life of an individual may be transmitted to future generations, immunity to disease ought likewise to be inherited. For hundreds of years the white race has been subject to such diseases as morbilli and scarlatina. Are our children less susceptible than we? Vaccination, which has been practised for many decades, unless performed on our children, leaves them as liable to contract smallpox as the barbarian's children.

But what about insanity and gout, surely these are inherited? We are glad to note that alienists are beginning to study their statistics with greater care. When an insane patient is admitted to an insane asylum the alienist is careful to inquire into the family history and to note every instance of mental derangement which occurred in the family. But what form of insanity, and when it happened, whether due to trauma or to acute disease—these things are not recorded. Even to-day some cases of insanity are not considered inheritable, and if a fracture of the skull causes epileptic insanity, though insanity be present in a near relation, such relationship cannot be said to influence the epilepsy. When DR. CHAPIN states that "insanity as a disease is not transmissible by inheritance, but may be acquired or evolved from a neurotic heredity as a basis," he is stating a principle that, sooner or later, must be generally recognized. "Knowledge, genius, and culture are not an inheritance, but depend rather on influence, education, and environment." Let us add vice and disease to this category, and we shall have to alter a great many of our medical notions, and we believe for the better. Can anyone doubt that the influence an hysterical mother exerts over her children from earliest infancy is sufficient to account for the neurotic dispositions often seen in such children? Children are most imitative. Not only do they copy the language of those with whom they are thrown in contact, but likewise the gait, gestures, expressions, and mannerisms. Place a child in charge of a melancholic nurse or in constant association with a hypochondriac, and unless such environment is counteracted by normal associations, may we not expect a neurotically disposed child? The contagiousness of mental diseases, of mental habits, is as yet too little realized. We know that chorea is contagious. Why not some forms of insanity?

Physical characteristics which may be due to accidents prior to birth, such as deformities in the skull and corresponding changes in brain-structure, will often be the cause of mental disturbance; and when such characteristics depend upon similar characteristics in the parent they can be considered inherited; but here a peculiar physical character, as, for instance, a small pelvis, is the inheritable thing—inheritable just as a certain racial type of nose may be, though not absolutely so.

Again, in this great question of inheritance we do not consider the importance of the environment acting on the child as it acted or acts on the parent. In the matter of gout, for instance, why may not the same diet that produced podagra in the parent be the cause of podagra later on in the child? We are very likely to be fed as our parents were fed. Our mothers learn cooking from their mothers, and teach the same art to their daughters. The same kinds of food are used. Cooking being as yet largely empirical, cooks and families get into a routine practice; and if gout runs in families, is it not because the family bill-of-fare has been handed down as an inheritance, and the disease with it? Rheumatism, some think, is a germ-disease. If so, heredity is not needed to explain its origin in a given case any more than it is needed to explain the origin of leprosy. Syphilis cannot be considered an inherited disease. The fetus may contract syphilis *in utero*, just as it may become infected with smallpox or typhoid fever; at least there is sufficient doubt about the matter to refuse to consider this disease as an example of inheritance.

Thus the great bugbear of heredity sinks into comparative oblivion, from which we hope it will not be rescued. If we once put it away from us, we shall not rest until we have so changed conditions and altered the environment that the great preventable diseases will be driven out of existence. It is one thing to believe a disease preventable and another thing to act up to that belief. The profession is just beginning to preach prevention, and it should do so more earnestly in the future. To the parent it says: You have charge of your infants during the most important part of their lives; as you train them, so they will be physically and mentally. Do not trust to Nature; do not trust to Providence; but attend to it yourself, lest your children reproach you in your old age. To society the new profession will say: The individuals of which you are composed are such as you deserve. If you allow unsanitary conditions to exist, you must reap the consequences in the shape of disease and vice. Do not expect healthy-thinking and healthy-acting men and women unless you provide a healthy environment. The forces of Nature are harnessed for our benefit. There is a vast deal more freedom in individuals and in the forces behind biologic evolution than we like to acknowledge. Disease and vice can be turned into beneficial channels, if we so will. The plagues no longer represent the anger of the gods, but we know them to be due to the negligence of men. In the end all men must die. We cannot absolutely save one single life; but whether one-thousand persons shall all live eighty years or one-half die before they are five years old depends largely, if not entirely, upon the action of society. When will we, as medical men, realize this!

EDITORIAL COMMENTS.

The "Diaductive Cure of Disease Through the Use of Pocket Oxydonor 'Victory,'" is the title of a pamphlet before us. From the description of the device we learn that "it consists of a piece of prepared metal, cylindrical in shape, about three inches long and one inch in diameter," with a cord or wire carrying a disc, to be fastened to the ankle or wrist. The "vocor," or other end of the instrument, is to be stuck in cold water. The absorption of oxygen is the object whereby every disease in the world, "except galloping consumption," is curable. "It is no kin in principles to medication or any of the electrical appliances," and is "yet unknown to established philosophy." "Not a day since September 15, 1854, *unless unconscious*," has the great discoverer ceased to devote his life to this great vest-pocket discovery. It is impossible to contract contagious diseases by means of the same instrument "during use," but when out of use "the elastic garter might." The discoverer, "Dr. Sanche, is the only source of artificially begotten spontaneous cure in every form," and it cost no less than $200,000. "No worse advice could be had" than that of the family physician concerning "Victory" "until after the medical world has been fully educated to this new philosophy." "'Victory,' timely and rightly applied, makes a man practically independent of disease in any form by means of the irresistible forces of nature, which thus becomes a true panacea." The price of this bit of iron and string is $25, and "the world has never been afforded such a profitable investment as the conversion of $25 in an oxydonor."

Among the testimonials and recommendations of this brazen nonsense are the names of ten physicians. Three of these names are not given in Polk's *Register*, and three are in the *Register*, but are "starred" names—*i. e.*, inquiry elicited no answers as to the little affair of the so-called doctors' graduation. Of the four remaining names, three are Hahnemannians, and one of these is the most enthusiastic "boomer" of all the recommenders—Dr. William Nephew King, of 214 West Forty-fourth Street, New York, who, we judge, has discarded all other therapeutic agents, treating vest-pocketally and oxydonically, but not sardonically, "almost every form of disease incident to this climate in this city for about three years." Typhoid fever he arrests in from seven to nine hours, completing the cure in from one to four days. Every form of insanity Dr. King knocks out at once with his miniature diaductive machine and its little "vocor." Of our ten physicians there remains one, Dr. J. W. Janes, of Atlanta, Ga., whom Polk classes as a "regular." We congratulate the regulars!

But our ten physicians of the body are matched by exactly the same number of physicians of the soul, who vie with each other in sonorous phrase and praise of the "Diaductive Cure." One of these, a Doctor-of-Divinity man, Rev. George D. Watson, is most marvellously cautious, because, although oxydonor cured his family's rheumatism, bad colds, etc., still "we found that our daughter Lulu needed special surgical treatment, and sent her to Gainesville some weeks ago." He signs himself, "Yours in Jesus," whilst Rev. J. F. Grob prefers the variation, "Your brother in Christ." These brethren are so proud of their new gospel that we would not seem invidious, and therefore we name them all: Rev. George D. Watson, D.D., Windsor, Fla.; Rev. Noble Frame, 706 Snyder Avenue, Philadelphia; Rev. J. F. Grob, 13 East Mount Pleasant Avenue, Germantown, Philadelphia; Rev. A. L. Kilburn, 607 West Lexington Street, Baltimore, Md.; Rev. Joseph Gaskill, 218 Perry Street, Trenton, N. J.; Rev. Z. R. Ward, Parker, South Dakota; Rev. C. M. Sessions, Mount Vernon, Iowa; Rev. J. I. Corbyn, Anamosa, Iowa; Rev. S. H. Reisner, Lebanon, Pa.; Rev. Henry L. Phillips, 707 Florida Street, Philadelphia.

A Hahnemannian Hospital for the Insane is desired by 20,000 persons of Pennsylvania, who have petitioned the Legislature, we presume, to give them both the money and patients necessary to carrying out the scheme. As the *Telegraph*, of Philadelphia, says: "This is a testimonial that cannot be ignored. It is the duty of the State to recognize public requests of this sort, and it is to be hoped the movement in favor of the Hahnemann Asylum will be favorably regarded. Pennsylvania should not be a laggard in matters of this kind." The query arises as to what is the exact nature of the therapeutics of insanity according to homeopathic principles. If, according to the etymologic and popular idea of the origin of lunacy the affection is due to the influence of the moon, then the rational treatment would, of course, be moonshine in high potencies. Swan, the New York homeopathic druggist, advertises moonshine for sale, all bottled and corked, ready for use, and, in all seriousness, we suppose it must be prepared for lunatics. For whom else, pray? But a further doubt arises as to the effect of dilution, "dynamization," or "potentization" upon moonshine. Does it make it darker or lighter, less moonshiney or more moonshiney? If, according to the theory, more intense, then moonshine dynamized the number of times required in the thirtieth potency would make it more powerful than light at the sun's surface, more powerful even than electricity of the greatest possible potential. As this would positively kill our poor lunatics in a jiffy, our legislators should couple their grant with the proviso that moonshine should not be administered in higher potencies than the second or third.

Moreover, if, as the wonderful *Telegraph* asserts, every medical sect which can get signatures to petitions to the Legislature to secure public plunder and patients (should therefore have said plunder and said patients), we respectfully appeal to the legislative sense of justice in favor of others. It would certainly be possible for the Keeleyites to get 20,000 signatures in reference to the cure of drunkards, morphinomaniacs, etc. Just as surely are there 20,000 people in Pennsylvania who believe in faith-cure as the sole treatment of disease. The *Literary Digest* and Funk & Wagnalls could probably secure 20,000 signers as to the merits of "Electropoise," and Dr. Sanche would soon produce signatures *ad lib.* of D.Ds., Reverends, and voters galore for the Diaductive Oxydonor Victory. From Dr. Slee's neighborhood the Pow-wow people should also have representation. There is at Atchison, Kansas, an "Electro-Hydro-Messopathic and American Health Institute" that "opens the doors to health." It is conducted by "S. Murphy, M.D.," the learned man spelling does, consummate, candor, please, type, venous, strict, endeavor, etc., *dose*, *consimate*, *kandor*, *pleas*, *tipe*, *venus*, *strick*, *endevor*, etc. Should such institutes and their friends not also be permitted to petition? And should not their prayers he heard and granted? Remarkably wise guide in medical and sociologic matters is the *Telegraph*—most uncommon wise!

"Doctor of Pharmacy."—Such is the title that the Philadelphia College of Pharmacy and the New York College of Pharmacy propose giving to those of their students who pursue post-graduate courses or whom they deem especially worthy of honor. The title, Doctor, is already quite sufficiently non-distinctive, and this last attempt will, if carried out, make it utterly valueless. We cannot understand this strange and morbid desire on the part of our pharmaceutic friends. Is it an attempt to get ahead of rival colleges of pharmacy who have not adopted the more extended course of study, and whom they hope to outstrip in offering high-sounding but empty titles as rewards for matriculants? If the aim were to elevate pharmaceutic scholarship, why not raise the standard of entrance-examination instead? That excellent journal, the *Pharmaceutische Rundschau*, in its April issue gives a history of the movement and epitomizes the unanswerable arguments against it. The heads of many of our chief universities are also united in the opposition.

The title of Doctor in our country, with the exception of the few instances of high scholarship in science or philosophy, has been almost wholly confined to members of the medical profession, and thus limited it has some significance and propriety. But if two schools of pharmacy give it to their graduates, all others must follow suit, and then the man who treats disease and the one who fills prescriptions will come to occupy the same position in the eyes of the community, and will be designated in the same way. The Doctors of Divinity have largely gone into the patent-medicine business in opposition to physicians; and if now every druggist also turns doctor, what in the world may medical men do and what may they be called? For twenty-five years at least the best men of the pharmaceutic profession have opposed, and until now they have successfully opposed, this vicious craze of the schools of pharmacy for plebifying the doctorate degree. If carried out now, the druggists will only make themselves objects of scornful mirth, and the degree itself, shortened to "Doc," will soon become the butt of ridicule and the familiar appellation of chiropodists, masseurs, and venders of nostrums. Certainly no sensible druggist who has any self-respect or who values the respect of the medical profession or of the public, would take to himself the empty honor of a title without acquiring the peculiar knowledge which for centuries has alone given the right to its use. The whole movement is amazingly silly, but it is also far worse than silly. Self-respecting pharmacists should oppose it with unwearying determination.

Progress in Chemistry is at present remarkably rapid and brilliant. The noteworthy discovery of argon, the new element, has been followed by its liquefaction, and now one of the discoverers of argon, PROFESSOR RAMSEY, announces that in experimenting with argon he has discovered still another new element, helium, the lightest of all the elements. It fills a gap demanded by chemic theory, and PROFESSOR CROOKES has demonstrated that it is to be attributed to line D_3 of the solar spectrum, at wave-length 587.47 micromillimeters. This line had been attributed to some unknown element which, though undiscovered, had been called helium. This is a brilliant vindication of theoretic chemistry, and PROFESSOR RAMSEY gains a richly deserved honor.

At the same time comes the most interesting announcement of the liquefaction of the last of the gases, hydrogen (the last, prior to the discovery of helium), under great pressure and intense cold. This has been accomplished by PROFESSOR OLSZEWSKI, of Cracow, who also liquefied argon. The "critical point" of hydrogen (*i. e.*, the temperature at which it passes from the condition of a liquid to that of vapor) is —233° C., and its boiling-point at normal pressure is —243° C.

Hydriatrics in Hospitals for the Insane.—We had occasion in THE MEDICAL NEWS of March 30th to call attention to the creditable showing made by the figures of the Pennsylvania Hospital for the Insane in tables giving the mortality from tuberculosis in a number of hospitals for the insane in the State of Pennsylvania. The explanation of this exhibit must be looked for in the general management and hygiene of the patients, as well as in special methods of treatment. Most will be accomplished in the treatment of the insane where it is recognized that a diseased condition is to be corrected, and the means to this end must include the widest range of hygienic as well as medicinal measures. Recognizing the utility of water properly applied in the treatment of mental disease, the Managers of the Pennsylvania Hospital have approved plans for the construction of a swimming-pool and Russian bath on the grounds of its department for the insane. Provision is to be made for various forms of douches, massage, and the like. In taking this step the Pennsylvania Hospital gives evidence of wise and progressive management, and the new feature should prove a powerful means of favorably influencing not only the special but also the general results of treatment.

The Society of Medical Phonographers, to which reference was made in The Medical News of March 9th, p. 274. now numbers, we are informed, 128 members, and new members continue to join. The promoters of the Society are anxious to have members in America. The publications of the Society can be obtained from the New York house of Isaac Pitman & Sons. Those members of the profession who use the slightly different Benn Pitman system will find little difficulty in reading that which is now used in Great Britain by 95 per cent. of shorthand-writers, and has been almost unchanged for thirty years. A strong desire is felt by the Society to promote the use of shorthand among the members of the profession in the United States as well as in Great Britain, and the Honorary Secretary, Dr. James Neil, Warneford Asylum, Oxford, England, is particularly anxious to hear from medical phonographers who are impressed with the importance of the movement, and, from a desire to improve the objects of the Society, would be willing to act as local agents for it in the United States.

Neither Generous nor Just.—Our esteemed contemporary, the *Medical Record*, of March 23, 1895, p. 371, contains a column-long excerpt from the editorial pages of The Medical News of March 16th without any credit to us, and without quotation marks. In the same issue (p. 372) there are eighteen more lines, also not credited. Still other instances of the same kind we will not mention, and even these would have been "forgiven and forgotten" had not a justly indignant contributor to our columns called our attention to a more regrettable omission in the editorial of the *Medical Record* of March 30, 1895, p. 403, on "Cardiocentesis and Cardiac Surgery." In The Medical News of October 27, 1894, Dr. James R. Church published a noteworthy memorandum concerning "A Case of Gunshot Wound of the Heart." In the *Record* editorial neither Dr. Church nor his article is mentioned, but eighteen lines from it are quoted verbatim, again without the borrower's marks and without mention of The Medical News.

A Sharp Practice as Regards the "Reading-notice," whereby many a too-innocent medical editor has been hoodwinked, is for the wily advertiser to do something very doubtful or criticisable, and then secure the reading columns of the journal to explain matters and to set himself right. Every honest editor wishes to be just and even charitable to all, and not least to the advertiser, and the plea is a powerful one that it is unjust not to "hear the other side," not fair not to give every one an opportunity to be heard in his own defence. But we think the scheme has been about "worked out." Every charlatan has made use of it, and the suspicion will in future arise that when such "fair play" is permitted there must be a clear *quid pro quo* at the bottom of the transaction. Most men, perhaps, would prefer that this suspicion should rest upon them rather than that of the most glaring gullibility. Why not avoid both?

CORRESPONDENCE.

THE DISCUSSION BY THE NEW YORK ACADEMY OF MEDICINE CONCERNING THE TREATMENT OF DIPHTHERIA WITH THE ANTITOXIN.

To the Editor of The Medical News,

Sir: The meeting of the New York Academy of Medicine for April 3d was arranged to be a symposium on the antitoxin-treatment of diphtheria, and a number of those who had had special opportunities to study this subject practically were invited to participate in the proceedings. Dr. Hermann M. Biggs opened the discussion by a historic and statistical report. The cases were divided into two classes, viz.: (1) those treated in the Willard Parker Hospital, and (2) those treated in the tenement-houses by the physicians attached to the Board of Health. In the latter class were 255 cases, with 40 deaths, or a mortality of 15.69 per cent. Fifteen of these deaths occurred within twelve hours after the injection of the antitoxin. If these were excluded, the mortality would be 10.4 per cent. Out of 197 cases in which the antitoxin-treatment was begun before the fifth day of the disease the mortality was only 7.79 per cent., and all the evidence seems to point to the fact that but little benefit can be expected from the treatment unless it is begun at an earlier stage than this. The series of hospital cases did not make such a good showing, probably owing to the fact that this list comprised many severe cases, and they did not come under observation until later on in the disease. Out of the 129 cases in this class there were 31 deaths, or a little more than 24 per cent. Comparing these figures with those obtained from the cases treated in this hospital in the same season of 1894, we find that at that time 146 cases of diphtheria were treated without the antitoxin, with a mortality of 32 per cent. Dr. Biggs said that in his experience the effect of the antitoxin on the membrane had always been quite marked, even when there had been but little improvement in the general condition. In a little more than 6 per cent. of the hospital cases eruptions, for the most part resembling urticaria, were observed, and albuminuria was observed in about the same proportion of cases. In most instances the serum employed was that manufactured under the auspices of the Board of Health. One case had a very troublesome urticaria, followed by swelling and pain in the larger joints and by loss of power in many of the muscles. In concluding his remarks the speaker said that it should not be forgotten that diphtheria-antitoxin is a specific only against diphtheria-toxemia; it does not restore renal cells or heart-fibers already degenerated, or relieve laryngeal stenosis. The earlier the antitoxin is administered, the more striking its effect. The mortality among cases throughout the city that were not treated with antitoxin was between 25 and 35 per cent. at the same time that the cases treated with the antitoxin yielded a mortality-rate of only 8 to 10 per cent. This in itself was a sufficient comment on the value of the new treatment.

Dr. C. H. Peck then described the success that had attended the use of the antitoxin in controlling a very extensive and stubborn epidemic of diphtheria in the New York Infant Asylum. The temporary immunity conferred in this way proved far more effectual than all the previous attempts that had been made to stay the disease by isolation.

Dr. George P. Biggs, after making eighteen autopsies on patients who had died after the antitoxin-treatment, said that he had come to the conclusion that the antitoxin had a distinct influence in loosening the diphtheric membrane, and that it also tended to check decidedly parenchymatous degenerations of the internal organs.

After the reading of papers the general discussion of the subject was opened by Dr. Joseph E. Winters. He denounced the new treatment most vigorously, and stated that careful daily observations in the Willard Parker Hospital during the past three months had not only forced him to take this stand, but had taught him to consider the statistics presented in the paper by Dr. Biggs as wholly unreliable and misleading. To support this strong assertion he cited a number of cases appearing in the statistics as having been successfully treated with the antitoxin, and narrated how he had been unable to find any *clinical* evidence of diphtheria in some, and only the mildest manifestations of the disease in others, although doubtless all of them had given the bacteriologic diagnosis of diphtheria. Passing over some of the minor points made in his sweeping criticism and denunciation of the work done in this hospital by the advocates of the antitoxin-treatment, attention should be called to the fact that Dr. Winters claims that the temperature-charts and many of the symptoms presented by not a few of the cases treated by the new method were strongly indicative of the existence of septicemia, and that the treatment resulted in establishing a condition of profound anemia. In his opinion the element of individual susceptibility would explain the disastrous results observed, including the fatal case very recently reported in Brooklyn. In conclusion, he said: "I oppose the antitoxin-treatment because in 150 cases treated in the Willard Parker Hospital there is not the slightest evidence that a single symptom has been relieved, and because it is dangerous in its immediate effects on the kidneys and nerve-centers, and in its remote effects on the blood."

Dr. George L. Peabody detailed his experience, showing that a bacteriologic diagnosis *alone* was very often far from satisfactory, and that something else besides the Loeffler bacillus was necessary for the development of the disease. His own experience with the antitoxin-treatment had been quite encouraging, and he thought that the bad results that had been observed by Dr. Winters might possibly be explained on the ground that they were cases of mixed infection, over which, it is well known, the diphtheria-antitoxin was powerless.

Dr. L. Emmett Holt expressed his confidence in the antitoxin-treatment, and expressed very similar views regarding the shortcomings of the bacteriologic test. A complete diagnosis of diphtheria should be founded on both clinical and bacteriologic grounds.

Dr. W. L. Somerset, of the Willard Parker Hospital, showed from the records of that hospital that there had been a distinct lowering of the mortality-rate by the new treatment.

Dr. Hermann M. Biggs, in closing the discussion, said that Dr. Winters had shown himself in many ways to be biased in his views on this subject, and perhaps in none more than in his allegation that there had been but little severe diphtheria in the city. It was not claimed that diphtheria-antitoxin would neutralize sepsis or anything but diphtheria-toxemia. So far as he knew, no case had been included in his statistics in which there had not been a clinical as well as a bacteriologic diagnosis of diphtheria made before beginning the treatment. The fact that there had been a sudden and marked lowering of the mortality in diphtheria all over the world since the adoption of the antitoxin-treatment was a sufficient refutation of the charge that it was wholly valueless.

NEWS ITEMS.

Pathologic and Anatomic Associations in New Jersey.— The Legislature of New Jersey has passed and the Governor has signed an act providing that any three or more physicians duly authorized and licensed to practise medicine under the laws of the State of New Jersey may associate themselves together for the purpose of pathologic and anatomic study and the advancement of medical and surgical science.

All public officers, agents and servants, and all officers, agents and servants of any county or of any city, township, borough, district, and other municipality, and of any and every almshouse, prison, morgue, hospital, or other public institution in such county, having charge or control over dead human bodies required to be buried at the public expense, are required to notify the president or other head officer of any such association or such person or persons as may, from time to time, be designated by said association as its duly authorized officer or agent, whenever any such body or bodies come to his or their possession or control; and shall, if such association or its duly authorized officer or agent request it, without fee or reward, deliver such body or bodies, and permit such association and its duly authorized officers or agents, who may comply with the provisions of this act, to take and remove all such bodies to be used within the State for the advancement of medical and surgical science; but no such notice need be given, nor shall any such body be delivered, if any person claiming to be, and satisfying the authorities in charge of said body that he or she is of kindred or is related by marriage to the deceased, shall claim the said body for burial, but it shall surrendered for interment; nor shall notice be given or body delivered, if such deceased person was a traveller who died suddenly, in which case the said body shall be buried.

Whenever more than one association shall be organized within the same county it shall become the duty of the board of governors or directors of each association to appoint two of their own number, who together shall constitute a board of distribution of dead human bodies, whose duty it shall be to distribute the bodies which may from time to time be so delivered to it under the provisions of this act equally and in just rotation among the different associations organized under this act.

Dr. S. C. Busey, of Washington, D. C., fell down the elevator-shaft in an apartment-house on April 5th, and suffered serious injuries.

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ORIGINAL ARTICLES.

SPRAINS:

A Report of Twelve Hundred and Thirty-one Recent Cases Treated by Massage at the Good Samaritan and Eastern Dispensaries.

In the Service of
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OUT-PATIENT DEPARTMENT.

During the years from 1887 to 1894, inclusive, 3280 cases of sprains have come under the observation of the surgeons connected with the Good Samaritan and Eastern Dispensaries. The distribution of these is shown in the following table. The first column gives the number of cases treated by massage in the hands of Professor Van Arsdale:

Region.	Masséed.	Total cases under observation.
Ankle	487	1153
Wrist	198	641
Thumb and finger	222	586
Elbow	45	178
Muscles	108	145
Shoulder	51	161
Knee	55	146
Toes	6	114
Hip	37	68
Foot	10	49
Back	3	22
Neck	4	8
Clavicle-joint	1	5
Tendon	3	3
Rib-joint	1	1
Totals	1231	3280

This list of cases treated by massage includes every degree of sprain from the slight stretching of the ligaments of a finger or thumb to the severe laceration of all the structures around the ankle, many cases being carried to the dispensary from twenty-four to forty-eight hours after the injury, the limb distended to two or three times its normal dimensions, "black and blue" from extravasated blood, etc., and the patient suffering from excruciating pain.

Most of the patients have been of only an average degree of intelligence, of foreign birth, and not at all likely to carry out strictly any but the most simple directions. It has been customary to demonstrate to them by masséeing the injured member for ten minutes, telling them to do likewise for a half-hour every morning and evening, and insisting on the constant use of the limb. A mixture of equal parts of olive-oil and chloroform was given them as a lubricant.

GENERAL RESULTS.

For several years, having had ample opportunities for observing the results obtained by others, and personally carrying out the splint-and-rest treatment of sprains in several of the largest dispensaries and hospitals in this city, it seems but just that the superior results secured by massage in so large a number of cases, with a lucid description of the *modus operandi*, be placed on record.

The best and quickest results are obtained in those cases in which treatment is begun immediately after the injury, and the sooner after injury massage is begun the shorter the time required for the complete restoration of full strength and vigor to the limb. At the same time neglected cases, or cases in which splints or any other means of immobilization have been used, will respond and give most satisfactory results.

IMMEDIATE EFFECT.

After a few minutes' massage of, say, a sprained ankle, the skin will become less tense, the limb paler, pain diminishes, and, as the rubbing continues, entirely disappears; the patient experiences a sense of ease and comfort that induces him to look forward to the next treatment with pleasure, and often to ask that the rubbing be repeated several times during the day.

In cases seen within about twelve hours after the injury, or before extravasation has occurred, if massage is begun at once, and kept up twice daily, the patient being urged to use the limb a half-hour after the first application, no accumulation of exudate and blood can occur, and the patient, therefore, cannot suffer from pain or loss of function from adhesions. Great stress must be laid on the use of the limb after massage, as the muscular action aids the lymphatic and venous circulation.

When there has been much extravasation, with marked distention of the skin and consequent pain, it has been necessary in a few cases to use an anesthetic at the first sitting in order that the massage may be thoroughly carried out.

If the method to be described is faithfully carried out, at the end of the first treatment the limb can be moved without pain in any of its normal directions. This fact, with the appreciable relief and sense of comfort, encourages the patient to use the limb.

The time required to achieve a cure may be said to be reduced from weeks to a corresponding number of days. Further than this, there are no "stiffness and sense of weakness and pain" in the joint, so often complained of, but a complete restoration of the normal functions of the limb.

In presenting this subject it is proposed to give:

1. The opinion and results of other workers in this field.
2. The results of experimental evidence.
3. A summary of the pathologic changes in joints following sprains.
4. The physiologic effects of massage as applied to sprains.
5. Van Arsdale's method, described by himself.
6. Indications—use in diagnosis of fractures.
7. Contra-indications.
8. Summary.
9. References.

OPINIONS AND WORK OF OTHERS IN THIS FIELD.

D. Graham[1] asks, "Supposing that any one wanted to make a well joint stiff, to what more effectual means could he resort than to give it first a wrench or sprain, then do it up in a fixed dressing, so that the resulting inflammation would have an opportunity to produce adhesion of tissues?" He further emphatically announces that "the sooner massage is used after a sprain the more speedy is the recovery, and the more quickly are heat, pain, and swelling reduced, and the formation of adhesions prevented. Comfort generally follows the first treatment."

In his monograph on railway injuries H. W. Page[2] has struck the keynote when he says, "I am altogether opposed to the treatment of these spinal sprains by the application of spinal jackets. They merely postpone to another day the treatment which will have to be carried out, and they moreover tend to increase the rigidity and make the ultimate treatment more wearisome and difficult."

In a paper on the "Use and Abuse of Passive Motion," read before the New York Surgical Society, Dr. Henry B. Sands,[3] speaks of the excellent effects from the use of massage and passive motion in recent sprains of mild degree. He further calls attention to the necessity of passive motion to prevent or remove stiffness or pain after one or two weeks' rest and immobilization, and to the liability of a sprained ankle (treated after the latter method) to be followed by a long-continued lameness and pain for a considerable or, it may be, an indefinite period, while in a still smaller number the foundation is laid of serious organic disease. No one who has had to do with many of these cases will question the deplorable truthfulness of these latter statements.

Cabasse[4] says that pain disappears, swelling decreases, and the torn ligaments grow together again better.

Drachmann[5] reports twenty-two cases of joint-disease, mostly cases of synovitis, acute and chronic, healed by massage in an astonishingly short time.

Bergmann[6] reports 145 cases (70 talocrural, 8 tarsal and metatarsal, 10 of the wrist, 6 of the fingers and toes, 5 of the elbows, 2 claviculo-acromial, 3 humero-scapular), and summarizes the results as follows:

	Treated in first 4 days.	Between the 4th and 9th day.	8th day to 3 months.
Necessary to recovery.	12.44 séances.	17.60 séances.	44.68 séances.

It is thus very clearly seen that early massage has a direct relation to the length of treatment required.

In nine bad cases, given in detail, the injury being at the ankle and knee, the patients could walk after the third séance.

Mullier[7] found that while 42 cases of sprains treated by immobilization required a mean of 25.6 days, 37 cases treated by massage required only an average of nine days.

Gassner[8] summarizes his results in a corresponding number of cases, and shows an average of eight days when treated by massage, as compared to twenty-eight days by immobilization.

Treatment.	Ankles. 9 cases.	Knees. 7 cases.	Wrists. 6 cases.	Elbows. 2 cases.
By immobilization . . .	9.9 days	9 days	5 days	9 days
By massage	22 "	37 "	30 "	9 "

This tabulation shows a gain in time of 75 per cent. in favor of massage.

Gottlieb,[9] Johnsen,[10] Billroth,[11] Möller,[12] Nycander,[13] Graham,[14] Zabludowski,[15] Virchow,[16] and Hirsch, all report cases successfully treated in one-fifth the time by massage, and Roux[17] obtained much quicker and better results in sprains and dislocations masséed than by immobilization.

EXPERIMENTS.

Mosengeil injected India-ink into the knee-joint, and in two minutes afterward, during which he used massage, found the particles in the femoral lymph-nodes.

Massage à friction, says Metzger, presses the extravasations and exudates into the lymph-vessels, and conveys them away from the point of injury into the general circulation; it also accelerates the blood-circulation by subsidizing the venous flow, at the same time producing slight hyperemia of the skin and other parts.

Nothing can better demonstrate the effectiveness of massage in emptying the vessels of an extremity than the method attributed to J. Wolf, of rendering a limb bloodless, before applying the elastic ligature, by elevation, and stroking toward the heart, now so commonly practised by surgeons.

"Lauder Brunton and Tunnicliffe (*Journ. of Phys.*, December, 1894) record the result of some careful observations of the effect of massage on the circulation. The experiments were undertaken in order to determine (1) the changes occurring in the circulation in a given group of muscles during and after massage; (2) the effect of massage of a large muscular area on the general blood-pressure. The experiments were carried out on cats, and the method used was the determination of the amount of blood passing in a given time from the efferent vein. The general results obtained are: (1) that during massage the flow of blood is increased through the muscles; (2) immediately after the cessation of massage an accumulation of blood occurs in the masséed muscles, which is followed by an increased flow through them; (3) massage of a large muscular area causes just a slight rise of blood-pressure followed by a fall which may amount to one-fifth of the initial blood-pressure. Both during and after massage of muscles a lowering of peripheral resistance in the corresponding area takes place, and hence more blood is propelled at each heart-beat from arteries to veins, and a fall of arterial tension ensues. The results are carefully compared with the effects of alternate compression and release of the arteries, and also with the effects of simply firmly grasping the muscles, both of which must be factors in the general result of massage. It was found that in each of these cases a rise and fall of pressure took place, but the effect was more transient. Gentle kneading was found to have more effect in causing a fall of blood-pressure than either compression and release of both external iliac arteries or of the muscles of both thighs."—*Times and Register*, Phila., 1895, vol. xxix, p. 93.

PATHOLOGIC CHANGES IN JOINTS FOLLOWING SPRAINS.

In endeavoring to account for these conditions from a pathologic standpoint I was disappointed in being unable to find any record of actual observations. Most authorities consider themselves justified in describing the anatomic changes occurring in sprains from their knowledge of the structures of the tissues involved and of the general behavior of healthy parts when subjected to traumatism.

Thus sprains are most generally defined as the result of forces that stretch the ligaments reinforcing the joint, the surrounding tendon-sheaths, the fibrous capsule of the joint, and the synovial membrane beyond their physiologic limits, or, in other words, forces that supersede the elastic coefficients of the tissues involved. The direct consequence of this is either partial or complete rupture of one or more of the parts mentioned, ranging from a slight over-distention of a single bit of tissue to the formation of a flail-joint. It is generally conceded, in addition, that at other portions of the joint farthest removed from the point of greatest tension, contusion and undue squeezing of tissues entering into the formation of the joint may occur. In consequence of these direct injuries, besides pain, tumefaction of the joint rapidly develops, due most frequently to intracapsular and extracapsular effusion of blood, and to an intra-articular acute serous exudation from the synovial membrane. In severe cases effusion of blood into the joint occurs, and especially when intra-articular ligaments are torn.

The numerous little tears and lacerations occurring in the ligaments and capsules of the joint and neighboring tendon-sheaths are well distributed throughout the tissues affected. Gussenbauer points out that we must not imagine that the special cells composing the tissues are individually damaged, but that the larger elementary portions of the tissues are torn asunder in a similar manner, in which a microscopic specimen of tissue is teased for examination. It will thus be seen that it is the intercellular substance that gives way, and, although the life and function of the individual cells may thus be jeopardized by being cut off from their natural capillary blood-supply, it is primarily the intercellular rents that engage our attention. These are, of course, at once filled with exudate and extravasation, and immediate emigration of leukocytes and formation of granulation-tissue ensue, with fibroblasts and epithelioid cells, and all the paraphernalia of reparative inflammation, while the injured elements exhibit karyokinesis. What becomes of the effused blood within the joint and between the shreds of tissue? Small effusions of blood are absorbed by the lymphatics, the red blood-corpuscles are either carried away bodily by the leukocytes, or else disintegrate, and are carried off by the lymph-current, and give the lymph-nodes a pigmented appearance. Larger effusions, however, soon undergo coagulation, and subsequently become organized, being invaded by newly formed connective-tissue and bloodvessels. Finally, substitution by connective-tissue results, which persists for a period varying from several months to many years. Very large effusions may become encapsulated and remain *in situ* for an indefinite period. Effusions into the joint-cavity proper, if not interfered with, probably do not coagulate quite so readily as elsewhere; but the fluid portions are eventually absorbed by the synovial membrane (not by the cartilage). After coagulation has occurred (which, according to Riedel, may take place after twenty-four hours; according to Volkmann, after two or three or more days) the same organization of coagulum may be observed within the joint as elsewhere. Effusions under the periosteum readily undergo osseous transformation. It will be readily seen from this description that the effusions of blood, both in the lacerated tissues and in and around the joint, do nothing else than interfere with the rapid progress of repair.

Although the effusion of blood in itself is only painful inasmuch as it causes undue tension, yet it is the cause of violent pain whenever any active movement is undertaken, and effectually prevents such movements from being carried out that might, of themselves, hasten the absorption of extravasations by improving the velocity of the lymph-current. The organization of the blood-clots, indeed, leads to the establishment of a definitive barrier to normal movement in the joints and in the tendon-sheaths.

On the other hand, the presence of a blood-clot in a partially ruptured portion of tissue does not in any way hasten the process of repair, for this is carried on by fibroblasts and karyokinesis in a much quicker and neater manner. In fact, the proper method of hastening repair would be to stimulate the circulation of the parts.

PHYSIOLOGIC EFFECT OF MASSAGE AS APPLIED TO SPRAINS.

If now we compare the physiologic effects of massage with the requirements and indications given by the pathologic conditions found in sprains, we must admit that the treatment by massage appears much better adapted to the circumstances than the older methods of rest and protection. The purely mechanic effects of massage consist in the expulsion and exportation of exudates and extravasations from the tissues, while the secondary effects embrace the stimulation of the circulation (as well as of the muscle-fibers and nerve-elements) and the production of molecular changes leading to alteration of sensation and the process of nutrition. These statements are made in regard to massage practised very soon or immediately after the injury. That massage is of the greatest benefit at a later date for combating stiffness, or ankylosis, or pain, in diminishing the products of a too-extensive inflammation or organization of exudates, and in breaking up vegetations, as well as improving the functions of degenerate muscle-fibers and nerve-fibers, is generally admitted by all, and need not here be specially dwelt upon.

VAN ARSDALE'S METHOD AS DESCRIBED BY HIMSELF.

In treating a sprained ankle by massage it is convenient to have the patient lie at full length on a rather low table (from 18 to 24 inches high) upon his back with his head on a pillow, or upon his abdomen, with the flexors of the leg relaxed. The limb should be bared to well above the knee, and no constricting garments should be permitted to interfere with the circulation in the thigh. Examination of the injured joint having been made, the circumference of the limb and the extent of motility noted, the entire foot and leg are next moistened with chloroform-oil uniformly applied by means of gentle rubbing over the entire surface. The gentle touch thus first brought to bear upon the parts has the advantage of reassuring the patient. In applying the emollient care must be taken to arrive at a "happy mean," as too little will result in friction, which will irritate the skin and increase the discomfort of the patient, while an excess causes the hand to slip over the surface, and results in an unnecessary waste of strength, an early fatigue on the part of the *masseur*, without accomplishing the desired effect.

Beginning well above the tender or swollen portions of the limb gentle, systematic, upward strokes are carried well above the knee. These first strokes are made with the pulp of the fingers, both hands being used and held parallel with the leg. At first the sides of the leg are attacked, one with each hand; but soon more of the palmar surface of the fingers are brought into contact with the skin of the patient and gradually surrounds the whole circumference of the leg, each stroke being long and slow (not more than thirty to the minute). As the force of the pressure is gradually increased, the pulp of the thumb is brought into play, and the right hand supersedes the other in force and activity until it will become necessary to grasp the lower part of the heel or metatarsals and make counter-traction in order to steady the limb and permit of a greater development of force.

When the leg, by a change of color from blue to white, shows evidence of depletion of venous blood and lymph, the strokes may begin lower down and more directly over the seat of injury, always being carried upward with the pressure exercised by the fingers—delicate, at first, but with ever-increasing intensity, with the thumb of one hand only, while the other hand steadies the foot in the most convenient position.

The tissues, which were hard and resistant to the touch at first, soon become softer and more elastic, and with this the pain at first experienced by the patient grows gradually less and his confidence in the operation increases.

From time to time, whenever the superficial veins of the leg that were first emptied appear engorged or swollen, it is considered imperative to continue the strokes upward to above the knee, and repeat the massage of the upper leg in order to evacuate the newly imported supply of blood and lymph well into the vessels of the thigh, and, as it were, "drive the fluids home." In like manner the toes and the portions below the place of injury are visited and their tissues also are emptied of the stagnant fluids.

The region around the ankle is now considerably smaller, paler, and softer than at first, and the thumb, keeping up the upward stroking all the time, and moving with an independent action against the fingers placed opposite to it on the limb, busies itself finding out the special points around the joint where more marked hardness and stiffness may be felt, and in diving down between the bony projections and tendon-sheaths, while it glides more lightly over the prominences and ridges of bone. The well-trained thumb is very quick at discovering the points of special soreness, even without the help of the patient's subjective sensations, and will make them special points of attack. When fatigue is experienced the hands are changed and the work carried on with the left.

Toward the end of the séance, which must be indicated by the patient's sensations and condition, the strokes are made to grow gradually more gentle again, and, becoming longer, extend from the foot well up to the knee, more closely resembling those described by some authors as *effleurage*. This procedure always gives the patient a sensation of pleasure and relief, and when the séance is ended he should be entirely free from pain, at least for a time. If he is not, it is a sign that the massage has not been properly applied.

The secondary measurements may be now taken, and if passive motion of the affected joints is considered advantageous this may now be carried out a limited number of times.

The remaining oil may now be wiped from the skin with a dry towel.

A mixture of equal parts ol. hyoscyami coct. (Ph. G.) and pure chloroform has proved the most serviceable lubricant. Rancid oil and impure chloroform should be avoided on account of the disagreeable odor and the resultant dermatitis.

The results obtained have demonstrated the truthfulness of the claims of others, and have shown that the earlier the massage is begun the shorter the time necessary for recovery.

Massage the limb twice daily, morning and afternoon, for half an hour at a time. After massage rest the joint for half an hour, and then permit the use of the limb in walking. Elevation of the leg between séances is always advisable. Moist warmth is useless.

INDICATIONS.

Massage is indicated in subcutaneous hemorrhage (hematoma), traumatic joint-inflammations, recent or of long standing, and other late forms of inflammation, such as that from rheumatism, etc.

Fractures at the ankle are not jeopardized by very early massage, but whether or not massage later on (during the first week) is harmful all are not agreed.

Immediate massage, on the contrary (if need be, under anesthesia), permits of a better diagnosis, and in cases with great swelling hastens the union of fragments by removing the blood and exudation between them. If fracture is made out, the massage is not to be repeated.

CONTRA-INDICATIONS.

Massage should never be applied in bacterial inflammations, *i. e.*, tuberculous, gonorrheal, or pyemic joints.

SUMMARY.

It is believed that the foregoing statements substantiate the following claims, viz., that massage of sprained joints will

1. Prevent swelling, or rapidly disperse it if present.
2. Prevent pain, or quickly remove it when due, as it must be, to tension.
3. Prevent stiffness, or overcome it when already present from disuse.
4. Prevent the sense of weakness and restore the part to its original vigor and strength.
5. Reduce the time of treatment from *weeks* to a corresponding number of *days*.
6. Permit the immediate use of the injured member.

I wish to acknowledge my indebtedness to Professor Van Arsdale for his courtesy in allowing me during the past three years to assist at the Good Samaritan Dispensary, and to compare the methods and results of treating sprains.

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10 West Thirty-sixth Street.

STRICTURE OF THE URETHRA IN WOMEN.

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STRICTURE of the urethra is an affection that is met much less frequently in women than in men. So far about sixty cases have been reported since 1824, when Lisfranc first drew attention to this condition. The facts that this affection is more easily remedied in women, and that in them the slighter forms are apt to pass unnoticed or neglected, render it probable that, had all such cases been reported, their number would have been considerably augmented. The most frequent cause of stricture of the female urethra is gonorrheal urethritis. In these cases the formation of the stricture, as a rule, takes place more slowly than when due to other causes, the symptoms appearing on an average about the eighth year after the onset of the gonorrhea. In some cases, however, stenosis appeared as early as the end of the first year, while in rare cases it may be delayed till the twentieth year. Van de Warker and Genouville believe that, contrary to the statement of Ricord and Reybard et Fissiaux, stenosis of the urethra is followed by symptoms of dysuria more rapidly in women than in men. Genouville explains this by the fact that the female bladder is less muscular and more distensible than that of the male, and, consequently, its functions will be more easily interfered with by any obstruction in the urethra. Strictures following gonorrhea constitute about one-third of all the reported cases, the average age of these patients being about thirty-nine years. Injuries during labor and puerperal inflammatory processes involving the urethro-vaginal septum, and resulting in the formation of cicatricial bands, may cause constriction of the urethral canal. Scanzoni has reported a case in which such a stricture resulted from a gangrenous colpitis following a forceps-delivery. Neoplasms of the urethral walls may obstruct the lumen of the urethra, as in David's case (*Gaz. des Hôp.*, 1870, lxxiii).

Stricture resulting from a urethral chancre is rare, but cases have been reported by Scanzoni, Velpeau, and Larcher. Two such cases came under my notice at the Rotunda Lying-in Hospital. In both the site of the stricture was immediately inside the meatus externus.

Two cases of congenital stenosis have been reported, one by Blum and the second by Fissiaux. In both the urachus persisted, and the urine oozed from the still patent umbilicus.

Senile contraction has also been cited as a cause by Herman. I have seen one case in which a marked stenosis of the meatus externus existed in a patient who had suffered for some time from the disease described by Breisky as kraurosis vulvæ.

When a vesico-vaginal fistula has existed for a considerable time the urethra may become greatly contracted from disuse (Skene) or from having been involved by the inflammatory processes at the time of the formation of the fistula. Too extensive application of any form of cauterization will also produce cicatricial narrowing of the urethra.

Most frequently the stricture is situated in the anterior third of the urethra, usually at or near the meatus externus. In rare cases several strictures may co-exist.

The symptoms of urethral stenosis are difficulty in micturition, with or without pain; gradually, as the stenosis becomes more marked, the stream of urine becomes less in volume, till it is voided only drop by drop; or, eventually, complete retention takes place. Should cystitis also be present, we find frequent desire to urinate, vesical tenesmus, the passage of pus and perhaps of blood in the urine. Owing to the resistance that it has to overcome, the bladder-wall becomes hypertrophied. Scanzoni has drawn attention to this condition and the effect which it produces on the internal genital organs. He has seen prolapse of the anterior vaginal wall result from it. Two cases of rupture of the bladder from over-distention, due to this cause, have been recorded. As in the male, here, too, cystitis, followed by ascending ureteritis and pyelo-nephritis, may set in and result in a fatal termination.

As a rule, the diagnosis is easy, the stricture being situated, in the majority of cases, in the anterior third of the urethra. On passing a sound along the urethra and following its course with the index-finger in the vagina an induration can usually be detected at the point where the sound is arrested. In this way, also, any cicatricial bands in the vagina which may be compressing the urethra can be palpated. A careful examination will exclude retention from pressure by neoplasms in the urethral walls or in the pelvis, retroversion of the gravid uterus, hematocele, etc.

The urine should be carefully examined so as to exclude cases in which the frequency of micturition and hindrance to the entry of the sound into the bladder arise from the presence of cystitis.

Calculus can be eliminated from the diagnosis by a careful bimanual examination of the bladder, combined with cystoscopy or sounding.

In most cases gradual dilatation performed every two or three days with Simon's urethral specula or Hegar's dilators will bring about a cure. Care should be taken to lacerate the urethral mucous membrane as little as possible in carrying out the dilatation. Should this prove ineffectual, external or internal urethrotomy may be performed. When the stricture is situated in the anterior part of the urethra, close to the meatus, complete division of the stricture and the urethro-vaginal septum may be performed, and the urethral mucous membrane stitched to the vaginal mucous membrane, thus transforming the two passages from the seat of the stricture to the meatus into one canal. Should cicatrices exist in the vagina they should be divided or excised. When there is much periurethral thickening vaginal douches of warm sublimate-solution and tampons of iodoform-gauze saturated with a solution of ichthyol and glycerol (10 per cent.) may be employed to assist in reducing it. When the obstruction is due to the presence of a new growth this should be removed. To perform internal urethrotomy Winckel advises that the urethra should be dilated till the seat of the stricture will admit the finger. A knife is then passed in with the blade held flat against the finger; after passing it through the seat of the stricture the cutting-edge of the knife is turned and pressed against the cicatrix, so as to divide it completely during the withdrawal of the blade. Should any excessive hemorrhage occur a large urethral bougie may be introduced and left in situ, so as to compress the bleeding point. The dilatation should afterward be maintained by the use of bougies if there is any tendency for the stricture to recur. In all cases the patient should be taught to introduce the bougie herself, and warned to return at once for treatment should any difficulty in micturition reappear. Resection of the strictured portion of the urethra after the method employed by Jouon in the male (*Sem. Méd.*, May 14, 1892) may be performed in cases in which the foregoing methods fail. The cut surfaces are united by fine catgut sutures. I have employed this procedure with good result in a case of traumatic stricture situated in the middle third of the urethra. Electrolysis has been successfully used by Newman and Fissiaux in their cases. Though good results have occasionally been obtained by rapid forcible dilatation, it should be discarded, as it may lead to persistent incontinence, and has no advantage over gradual dilatation. Verneuil lost one case treated by this method. Probably, however, with the recent advantages of asepsis any danger as regards the life of the patient can be altogether obviated. In cases in which, with narrowing of the urethra, there is also present a vesicovaginal fistula the former condition should be attended to before attempting to close the fistula.

The Mitchell District Medical Society will hold its next meeting at West Baden, Orange County, Indiana, on July 5 and 6, 1895. An interesting program is in course of preparation.

CLINICAL MEMORANDA.

A CASE OF ACUTE DIFFUSE SCLERODERMA OCCURRING IN A CHILD TWO YEARS AND THREE MONTHS OF AGE; MARKED IMPROVEMENT FOLLOWING THE ADMINISTRATION OF DESICCATED THYROID GLAND.

By JAMES P. MARSH, M.D.,
OF TROY, N. Y.

ON January 21, 1895, W. M., a male child, two years and three months of age, was first brought to my notice. His complaints, according to his mother, were of hardening and thickening of the skin, particularly that of the face, forearms, and hands, together with a marked coldness of the affected areas. The father and mother are both living and in good health. This child has two living brothers and two living sisters, all of whom are now well and have always been healthy. There are no brothers or sisters dead, and there is no history of family predisposition on either side.

This child was carried to term, and his birth was perfectly normal. He enjoyed good health from his birth, never having been ill a day until about October 31, 1894, when he was taken with what a local physician diagnosticated diphtheria. This proved to be a severe attack, attended by symptoms of systemic poisoning, but not by those of croup. However, he recovered and appeared to be entirely well for about one week, when quite suddenly he could not walk. For a few days he remained completely paralyzed in his lower extremities. Gradually he recovered the use of his legs, so that about ten days from the inception of his paralysis he could walk well.

The history of his present illness begins one week after regaining the use of his legs. One day, about December 1, 1894, while giving the child a bath, his mother noticed that his face and hands were becoming cold, hard, and stiff. The child did not act as if ill, but this condition of his skin continued to increase, spreading from the face to the scalp, and downward to the neck and on to the shoulders and back. During the preceding two weeks it had not extended any further. The previous attendant being consulted pronounced the disease "dropsy," and evidently regarded it as being due to post-diphtheric nephritis.

At this time the child apparently felt perfectly well. He played heartily, ate and slept well; evacuation of the bowels and urination were normal. He cried but little, and when he did the tears were scanty and soon ceased to flow. Mentally he was very active and quick, and seemed to keep himself busy about something all the time. He was, perhaps, a little more irritable than usual, but even this was doubtful. Previous to his illness he could say "Papa" and "Mamma," "Yes" and "No" distinctly. Now he had substituted "Bap" for papa, and the only other syllable that he spoke was "Yep." He could laugh and cry, but the expression came almost entirely from the action of the *orbicularis oris* and the *orbicularis palpebrarum*. He was said to have had a very thin, white skin before his present sickness began. Since his illness he had never been seen to sweat. He was a blond child, with long, silky, golden hair, the nutrition of which was not in any way impaired. He had brown eyes, which were active and intelligent. There was no apparent involvement of the lips or tongue. The skin of the face and hands appeared at times quite natural, and then again a pinkish flush passed over it, which soon gave place to a yellowish, muddy hue. There was no pigmentation on any part of the body. On the dorsum of the forearms there was a slight tendency to a desquamative exfoliation. The pulse was 108 at the wrist and the temperature 98° taken in the axilla. The skin of the face, neck, forearms, and of the external aspect of the thighs was thickened, cold to the touch, not movable, and smooth. The skin on the rest of the body could be felt to be involved in the process, but not to so great an extent as that in the situations mentioned. It did not pit on pressure, and felt more to the hand like carved marble than like living flesh. The legs and feet were the least involved of any part of the body. Over the shoulder-blades there was considerable thickening, and here the vocal fremitus was markedly increased without any pulmonary condition to produce it. The electric reactions and the examination of the blood were not satisfactory on account of the refractoriness of the child. The lungs, heart, and abdominal organs were normal; the thyroid gland was not enlarged; the urine had a specific gravity of 1020, and contained neither albumin nor sugar.

The diagnosis made was acute diffuse scleroderma, and as to treatment, one grain of desiccated thyroid gland of the sheep each night at bedtime was ordered.

On January 24th the patient, having taken three doses of the thyroid preparation, became very feverish and stupid. This condition lasted all day, and was unaccompanied by cough, vomiting, diarrhea, or throat-symptoms. The next day the fever disappeared, and the child was as usual, excepting that the surface of the body did not feel cold.

On January 28th it seemed both to the parents and to myself that the hands and forearms were warmer and that the skin of the face was less hard. The specific gravity of the urine was 1020, and this contained no abnormal constituent.

On February 7th the hardened areas were softer and the animal heat of the child was normal.

On February 26th the skin was much softer and the speech was clearer and more distinct. The temperature was normal all the time. The mother said that the skin was quite hard in the morning when the child first got up, but that it rapidly softened until noon, after which hour it remained about the same during the remainder of the day.

On March 1st, at 1 P.M., he was noticed by his mother to have high fever, cough, and rapid breathing. He had now bronchial râles in the lower lobe of the right lung. The pulse was 112, the breathing 40, and the temperature in the axilla 98°. The skin was very much softer, and that of the hands and face was beginning to show a fine wrinkling.

On March 3d the child was as usual.

On March 4th he sweat for the first time. The skin of the forehead could be seen thrown into slight folds when he scowled. One very marked change had occurred in the child's disposition since he had been using the thyroid. He had become very vicious and ugly. He would bite and strike his mother, and was frequently in a frenzied rage, throwing or biting anything within reach. He had become the terror of the household, seeming to be entirely reckless of all consequences when he was crossed. His intellect was intact. The condition was not one of mania, but of downright viciousness.

On March 15th the hardness had entirely left the thighs, and the arms and hands were but slightly thickened. The face was still somewhat hard. There was no longer increase in the hardness after sleeping, and he perspired upon exertion in a natural manner.

There are two points in this case for which I have found no authority. The first is the presence of an increased vocal fremitus over the areas of thickened skin situated on the chest. This is easily explained in that we have a more rigid chest-wall, which, like a tense diaphragm, receives and responds to the sound-waves more readily than the normal chest-wall. The second point is the use of the desiccated thyroid gland. This mode of treatment was suggested to me by the similarity of this disease to myxedema and the known efficacy of this medicament in the latter affection. The fever that occurred to my patient after taking three doses of the drug is, to my mind, of the nature of the reaction which has been observed to occur in cases of myxedema when it has been administered. Whilst the child is not entirely cured, his condition is so much improved in so short a time that I feel confident that we possess in this desiccated thyroid a remedy of value for acute diffuse cases of scleroderma.

The literature of this disease is meager and unsatisfactory. The disease may be defined as a thickened, hardened, indurated, or hide-bound condition of the skin, which may be either circumscribed or diffuse, acute or chronic. In the household of diseases it is related clinically to myxedema and morphea, and pathologically to capillary fibrosis. The disease is rare, more so in its acute than in its chronic variety; it is less common in children than in adults, in males than in females.

As regards the acute diffuse form, little is known of its etiology. Graham, in his article in Keating's *Encyclopedia*, refers to two cases that occurred in girls of twenty years of age, and had been preceded by pneumonia. Likewise Osler reported to the American Pediatric Society at its meeting in 1893 a case in a child fourteen months of age, that had a coexisting croupous pneumonia. The scleroderma started on the eighth day of the pneumonia, and in twenty-four hours had involved the entire body, with the exception of the genitals and scalp. The following day the child died. Dr. J. E. Graham, of Toronto, has reported two cases that would seem to establish a relationship between this disease and rheumatism. The first case followed an attack of rheumatism, and the other occurred in a patient who presented a history of hereditary rheumatism. Pepper has reported two cases that seemed to be due to exposure to cold. In my own case it is plain that the attack of diphtheria stands in a causative relation. I think, therefore, that we are justified in saying that the disease is frequently preceded by pneumonia, rheumatism, diphtheria, or exposure to cold.

When we take up a consideration of the pathology of the disease we find that it is only during the last four or five years that autopsies have been reported that are at all complete or reliable. Both of Pepper's cases were followed to the autopsy-table. The distinctive condition found was a connective-tissue hyperplasia, most marked in the layers of the derma and superficial fasciæ, and also a general tendency to connective-tissue over-growth throughout the body, especially in the splenic capsule. In addition Dinkler (*Deutsches Archiv für klinische Medicine*) has pointed out that the hyperplasia is not confined to the skin alone, but also involves more or less of the vascular tissues of the body. It would seem, therefore, that this disease should be classed among the general diseases rather than among those local to any one organ.

The diagnosis of scleroderma is easy. It might be confounded with myxedema, edema, morphea, carcinoma *en cuirasse*, and eczema of the palms. In myxedema the onset is gradual. There is always thickening of the lips, tongue, and bridge of the nose. The edema, or rather hardening, is not influenced by gravity. There is no pitting on pressure. The temperature is subnormal, the skin is dry and desquamating, and the nutrition of the hair is interfered with. The intellect is torpid, gradually tending toward dementia. The urine is diminished in quantity and sometimes contains a small amount of albumin. In edema there is no especial thickening of the lips, tongue, or nose. The swelling is influenced by gravity and pits on pressure. The temperature is normal or increased. The skin is moist and the intellect, unless the patient is comatose, is intact. The urine is of high or low specific gravity and contains albumin and casts, and sometimes blood if the edema is of renal origin. Morphea is a circumscribed scleroderma, which in the beginning has a limiting margin of hyperemia about it, and the area affected becomes white, proceeding to atrophy. Carcinoma *en cuirasse* usually starts from the breast and is hyperemic, later becoming ulcerated. It also rapidly develops the carcinomatous cachexia. Eczema of the palms is of a horny consistency, the hardening affecting the palms of the hands, which are the last parts to become affected in the other diseases mentioned, and it is usually attended by itching.

Of scleroderma the prognosis is very uncertain. The acute form is sometimes recovered from; the chronic seldom, or never. The acute form sometimes kills rapidly, as in Osler's case death ensued in forty-eight hours. On the other hand, the disease, after lasting from six months to one year, subsides, leaving the skin in its previous condition of health. In the acute form about as many die as recover, yet, as Dr. John Dunn, of Richmond, in reporting a case of the chronic form, has remarked, when it does resolve or begin to improve it does not relapse.

Various treatments have been advised. Almost all advocate general tonics, as cod-liver oil, etc., together with warm baths and inunctions of oil, but every one seems to have a very indefinite idea of why he advises this or that. Dr. Brocq, in the *Gazette des Hôpitaux*, relates a case of circumscribed scleroderma which was very much improved by electrolysis. From ten to fifteen milliampères were used in the treatment, but I have great doubts as to the electrolytic power of a current of this resistance when applied to pathologic conditions. Dr. J. Friedländer relates a case in which he effected a cure by baths, inunctions of oil, massage, etc.; but, as the disease had been present for six months before treatment was instituted, and as it took an additional six months to complete the cure, I attribute the recovery in this case more to *vis medicatrix naturæ* than to Dr. Friedländer's efforts.

A CASE OF ACUTE EDEMA OF THE LARYNX IN WHICH RECOVERY FOLLOWED TRACHEOTOMY.[1]

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ON the evening of December 28, 1894, I saw, in consultation with Drs. J. J. Black and R. R. Tybout, of New Castle, Del., J. S., twenty-five years old, who was first seen by Dr. Tybout on the evening of December 27th, when he complained of some soreness of the throat. When Dr. Tybout first saw him he stated that the man had a temperature of 101°, the respirations numbering 20 to the minute, and upon inspection of the throat he found some inflammation of the tonsils and some injection of the veins of the pharynx; the patient also complained of slight difficulty in breathing. Dr. Tybout was called to see the patient again early next morning, and found him sitting up, very restless and presenting marked symptoms of dyspnea. An examination of the throat at this time showed some inflammation of the tonsils and a swollen edematous condition of the epiglottis. The dyspnea persisted through the day, was occasionally much aggravated, and there was at times an expectoration of muco-purulent matter, and by evening cyanosis of the face was well marked.

When I saw the patient on the evening of December 28th, about 11 o'clock, I found him sitting in a chair, presenting marked symptoms of dyspnea; his expression was anxious, the voice was suppressed, respiration was noisy, due to rattling of secretion in the trachea; the face was cyanosed, and there was occasionally expectorated, with great difficulty, a thick, gelatinous muco-purulent secretion; there was dulness over the posterior portion of both lungs, and auscultation showed that air entered the lungs, but the respiratory sounds were obscured on account of the transmission of the sounds from the trachea. The patient's temperature was 101° and the pulse was 130. Upon examination of the throat I found the tonsils moderately swollen and the pharynx injected; the epiglottis was very much swollen and edematous, presenting a tumor of the size and shape of a horse-chestnut, its cartilaginous outline being entirely masked by the swelling. A mouth-gag was introduced and the epiglottis was freely incised. This procedure was followed by the escape of a considerable quantity of dark-colored blood, and there was coughed up a quantity of thick blood-stained muco-purulent matter. The man experienced marked relief from his dyspnea after the incisions had been made, and, after waiting for half an hour, the epiglottis was again incised, and upon examination it was found that swelling of the epiglottis had diminished so much that the cartilaginous outline could be felt with the finger. After waiting for an hour it was noticed that the dyspnea was again becoming more marked and the cyanosis was also increasing. The temperature at this time was 101°, the pulse 140. After consultation with Dr. Black and Dr. Tybout it was decided that it would be wiser to open the trachea, and the patient was placed upon a bed and a few drops of a 2 per cent. solution of cocain were injected into the cellular tissue of the neck over the lower portion of the trachea ; the trachea was then exposed and opened below the isthmus of the thyroid gland, and a No. 5 tracheotomy-tube was introduced. As soon as the trachea had been opened the patient expectorated through the wound a large quantity of blood-stained muco-purulent matter, the blood-staining being evidently due to leakage from the previous incisions in the epiglottis ; this secretion was so thick that it lodged in the inner canula of the tracheotomy-tube, and to clear this it was necessary to remove the inner tube and use a feather. The patient's dyspnea was entirely relieved on the introduction of the tracheotomy-tube, and he breathed quite comfortably so long as the tube was kept free from the secretion and he was able to rest in the recumbent posture. Breathing was comfortably carried on after the operation, and, although the man was quite ill for forty-eight hours, and continued to cough up large quantities of muco-purulent matter, after this time he improved rapidly.

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[1] Read before the College of Physicians of Philadelphia, April 3, 1895.

After the operation the case was most judiciously treated by Drs. Black and Tybout, the treatment consisting largely in the use of strychnin hypodermically, quinin and stimulants. I saw the patient again at the expiration of a week, and at that time the temperature was normal and the pulse 80. The profuse expectoration through the tube had ceased, and there was then only a moderate amount of glairy tracheal mucus coughed up. At this time I changed the tracheal tube and introduced a new one, and after this Dr. Tybout changed the tube again in a few hours, as it was not so comfortable as the previous tube. The tracheotomy-tube was finally removed on the nineteenth day, and the wound was healed four weeks after the operation.

Edema of the glottis is a term that the older writers employed to designate a disease characterized by a serous infiltration of the submucous tissue of the larynx. The condition is probably better named by modern writers as acute edematous laryngitis, phlegmonous laryngitis, or acute edema of the larynx. Mackenzie attributes this form of disease to septic influences, and Massie and Fasano believe that these cases are really examples of erysipelas of the larynx, claiming that the presence of Fehleisen's micrococcus has actually been demonstrated in this condition. Acute edema of the larynx may occur as an apparently primary affection, or may follow an attack of acute pharyngitis or tonsillitis, but rarely follows acute catarrhal laryngitis, and the affection seldom terminates in the formation of an abscess. Sestier found in 158 cases of edema of the larynx that 36 were primary and 122 were secondary. The occurrence of edema of the larynx quite independently of any inflammatory process has been pointed out by Ziemssen;[1] it is likely to occur as a result of general dropsy from disease of the kidneys, heart, or lungs, or from circumscribed obstruction of the laryngeal veins through compression of the superior or inferior thyroid veins, the facial veins, inferior jugular or innominate veins; by swelling of the lymphatic or salivary glands, enlargement of the thyroid gland, new growths in the neck or aneurisms. Acute edema of the larynx may also have a traumatic origin, and may arise from the inhalation of hot air or steam, or the swallowing of irritant poisons or caustics, such as strong ammonia or concentrated lye. The affection is rarely seen in children, unless it be of traumatic origin, and it is more frequently seen in men than in women. Acute edema of the larynx seems more liable to occur in persons whose general health is below par, upon exposure to cold and dampness. In the case I have reported the patient was in good health previous to the attack, but had been exposed to cold, and the development of the edema of the larynx was preceded by tonsillitis and pharyngitis of moderate severity. Lennox Browne states that edema of the epiglottis is especially marked when laryngeal inflammation follows a pharyngitis. The edema is not confined to the connective tissues of the supraglottic region, but in many cases extends downward and causes infiltration of the submucosa below the vocal bands, a fact that explains why temporary relief of the dyspnea is often obtained by scarifying the epiglottis and vocal bands, and dyspnea later develops, which requires further operative treatment for its relief.

The symptoms of edema of the glottis are suppression of the voice, stridulous respiration, the difficulty being at first most marked in inspiration ; later the expiratory act is also embarrassed, cough is present, and is usually unaccompanied by expectoration, and is often painful; deglutition is difficult and painful. In addition to these symptoms when the affection is well developed the patient is restless and cannot remain any considerable time in the recumbent posture, sits up or walks about; the extraordinary muscles of respiration are brought into play, the lips become cyanosed, the eyeballs become prominent, and the patient exhibits a most anxious expression of countenance, presenting all the symptoms that the Germans well describe as those of "air-hunger," so familiar to those who see urgent cases of obstructive dyspnea. In mild cases of edema of the larynx the use of saline cathartics is indicated, and Lennox Browne recommends highly the use of pilocarpin hypodermically in doses of from $\frac{1}{12}$ to $\frac{1}{4}$ of a grain, and the inhalation of warm vapors. As soon as the edema is well developed scarification of the edematous tissue should be practised, and should be repeated if, after temporary relief, the dyspnea returns. The pilocarpin-injections and the inhalation of warm vapors should also be employed after the scarification has been practised. If, after repeated scarifications, dyspnea is still present, tracheotomy should be promptly resorted to, and the trachea should be opened at as low a point as possible, for the edematous process may involve the mucous membrane of the upper portion of the trachea; the relief of the dyspnea after tracheotomy is usually complete.

I am not aware that intubation of the larynx has been practised to any extent for the relief of dyspnea in cases of acute edema of the larynx. In cases in which the epiglottis is much involved I do not think that the intubation-tube would be of any service, but its introduction might be of use in cases of subglottic edema.

The treatment of cases after tracheotomy has been performed consists in keeping the patient in a warm room, the air of which is rendered moist by the use of a steam spray, and the tracheotomy-tube should be kept thoroughly cleansed. If the patient does well, the tracheotomy-tube can usually be dispensed with at the end of ten days or two weeks.

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[1] Cyclopedia of Medicine, vol. vii, 1876–77.

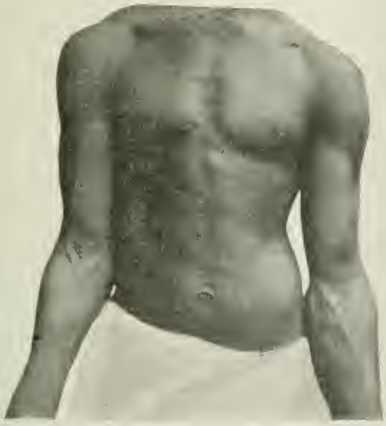
The prognosis, as might be expected, is more favorable in cases of acute primary edema of the larynx than in cases of secondary edema. Sestiér[1] reports 213 cases, both acute and secondary, 158 of which were fatal. Gross reports 132 cases of edema of the larynx, in which ordinary treatment was resorted to, of which 104 terminated fatally; 36 cases were subjected to tracheotomy, and 13 recovered and 23 died.

SYRINGOMYELIA WITH MARKED UNILATERAL ATROPHY.

By M. H Bochroch, M.D.,
of Philadelphia;
Instructor in Electro-Therapeutics and Chief Assistant in the Nervous Department of Jefferson Medical College Hospital.

An unusual form of a rare disease justifies me in putting the following case on record. The patient presented himself at the Neurological Department of the Jefferson Medical College Hospital, and it is through the courtesy of Professor Dercum that I report the case.

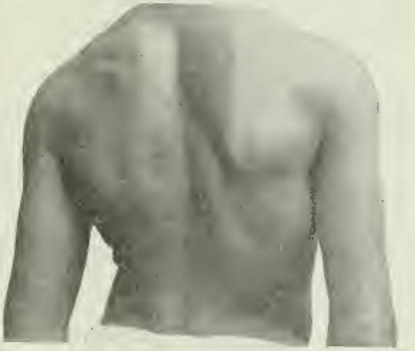
L. P., aged sixteen years, colored, with a negative family history, by occupation an errand-boy, claims to have enjoyed good health until six years ago, when he noticed a "sore" developing on one of the fingers of his right hand. This continued for several months, a few pieces of bone coming away. He asserts positively that it was never accompanied by pain. Soon after this another "sore" developed on the ulnar side of the right arm above the wrist, the size of a twenty-five-cent piece. This healed after about three months' time. Soon after this he noticed weakness in the grasp of the right hand, followed by weakness of the entire right arm. At no time had he any pain in the arm, the only sensation experienced being described as a "dead feeling." He also noticed that the arm had grown smaller.



The boy is rather below the average height for one of his years. He is, however, well nourished and mentally quite bright. Both arms seem unusually long. There is a dry, scaly condition of the skin on the outer aspect of the right arm, extending from the back of the wrist up to the elbow. It is noticed at once that the muscles of the forearm and hand are much atrophied. Wasting, less marked, is also noticed in the upper arm. There is, in addition, a marked difference in the size of the muscles of the two halves of the trunk, the right being the smaller. This is especially evident in the muscles of the lower dorsal and lumbar regions of the back, which are much atrophied. In consequence of this atrophy there is a marked scoliosis, the curvature being toward the right.

The muscles on the left side are not only of normal size, but seem excessive in development. The muscles of the right leg and thigh also present evidences of atrophy. Tactile sensibility is everywhere preserved; the thermal sense, however, is markedly impaired or lost in the atrophic regions, and this is particularly the case at the tips of the fingers on the dorsal and palmar surfaces of the hand, and on both anterior and posterior aspects of the forearm halfway to the elbow. Over the upper arm, the right side of the chest, and the right thigh the thermal sense is diminished, but not lost. There is also loss of pain-sense in these areas, but this is less pronounced than the thermal loss—*i. e.*, it is less extensive in distribution.

Response of the muscles to the galvanic and faradic currents is diminished, especially in the thenar and hypothenar eminences. There are no reactions of degeneration. There is a slight tremor of the right hand. Fibrillary contractions, however, are absent. The patellar tendon-reflexes are absent on both sides. Scars at the sites of the sores described by the patient can be distinctly seen. Other examinations, including that of the eye, proved negative.



Cases of syringomyelia are not so unusual as to make it necessary to report every case in which the diagnosis is made. However, in the present instance the symptoms are confined entirely to one-half of the body, and the lesion in the cord must be unilateral. This fact is certainly remarkable, and must influence our conceptions of this interesting disease. The occurrence of painless whitlows early in the history of the case is also of great significance. It is a fact pointing to the identity of syringomyelia and Morvan's disease.

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[1] Sestiér, Traité de l'angine laryngée édémateuse.

A CASE OF OSTEOMYELITIS OF THE ANKLE-JOINT, ILLUSTRATING THE UTILITY OF BONE-CHIP IMPLANTATION.

BY EMANUEL J. SENN, M.D.,
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MISS K., an American, aged eighteen years, entered St. Joseph's Hospital June 25, 1894, with an affection of the left ankle-joint. Upon examination two sinuses were found—one upon either side of the foot. The one on the external aspect just below the malleolus communicated with the joint-cavity, while the other one was superficial. The foot was slightly swollen, and it was impossible for the patient to bear any weight upon it. After eliciting the clinical history the case was diagnosticated as chronic suppurative osteomyelitis, resulting from a preexisting acute osteomyelitis. Some two years before the patient had been suddenly taken ill with fever and a gnawing, boring pain over the lower extremity of the tibia. After several days' duration the pain suddenly abated, when a circumscribed swelling appeared externally. This was incised and drained by means of multiple drainage-tubes. Upon introducing the probe into the external opening it was at once evident that there was a communication with the joint-cavity, although with the most careful probing no osteoporotic bone could be discovered. Taking into consideration the slight elevation of temperature which appeared from time to time, the muco-purulent discharge, and the edema of the foot, the evidence pointing to slumbering pus-microbes, with consequent sequestration, was conclusive.

Two days after the patient's entrance into the hospital she was etherized and an external incision made over the sinus into the joint-cavity. The joint was found to be filled with unhealthy fungous granulations of a bluish-white color, showing the chronicity of the affection. The microbes, by successive colonies during the two years, had become so attenuated that they had lost their pus-producing power, and simply acted as irritants, causing tissue-proliferation. After removing the granulation-tissue with a Volkmann spoon the wound was explored for the sequestrum. After no inconsiderable manipulation a small canal was found that led upward into the medulla of the tibia, and the probe then came in contact with osteoporotic bone. The external incision was enlarged in an upward direction, and after chiselling away a portion of the involucrum the sequestrum was finally extracted *in toto*. Subsequently I found that the disease had destroyed a portion of the astragalus; but the necrosis here was superficial, and was thoroughly dealt with by curettement. After disinfection with mercuric-chlorid solution and hydrogen dioxid the cavity was dusted with iodoform and packed with decalcified bone-chips. The wound was only partially sutured, the most dependent portion being left patent for drainage.

The temperature after the operation remained normal, and the wound healed rapidly. In five weeks the patient left the hospital, greatly increased in weight and able to give up her crutches in lieu of a cane. Two weeks later she was able to dispense with the cane and bear her entire weight on the limb. The joint performed its physiologic function, daily passive motion and massage having secured for it almost its original range of motion.

This case is of interest from a pathologic standpoint. The primary suppurative osteomyelitis very probably had its origin just above the epiphysis of the lower extremity of the tibia. Radical operative treatment not having been resorted to when the fissure on the abscess-wall was at a maximum, the pus did not travel in a proximal or a peripheral direction, which are ordinarily the lines of least resistance, and ultimately effect spontaneous evacuation, but proceeded in a distal direction, piercing the epiphyseal cartilage and causing a secondary suppurative arthritis. This is certainly an interesting phenomenon, as the blood-circulation in the epiphyseal area is very abundant, and should afford a formidable barrier to the army of pus-microbes by an efficient phagocytosis. Again, from an anatomic standpoint, one would not expect extension by contiguity from the diaphysis to the epiphysis, instead of extension by continuity in the opposite direction. This case also illustrates what may be accomplished by effective curettement and secondary disinfection in transforming a septic field into an aseptic field, even in such an unfavorable location as a joint with its many secluded and intricate synovial pouches. It would be unreasonable to suppose that this cavity had been made perfectly aseptic from a bacteriologic point of view. Some pus-microbes must have remained, but they were greatly diminished in quantity and were well taken care of by a proficient phagocytosis, as the local circulation received a great stimulus through the mechanic effects of the operation.

The interesting feature in the treatment was that the external wound was kept open by iodoform-gauze, so that I was enabled to make clinical observations *in vivo* of the efficiency of the implantation of decalcified bone-chips. The primary dressing was not removed until the seventh day after the operation, and the view presented was indeed a beautiful picture of tissue-proliferation. The edges of the wound were surrounded by healthy granulations, with extension here and there between the chips, which were hermetically cemented together by the primary wound-secretion. Already the chips at the periphery of the wound presented a pinkish tinge, denoting that vascularization was making rapid progress.

After the first dressing the wound was redressed semi-weekly, not for the purpose of disinfection, as perfect asepsis prevailed throughout, but for the purpose of cauterizing the granulations in order to stimulate their negative capacity. At the end of three weeks the area previously occupied by the chips was filled with dense granulations, the chips having become absorbed. The third stage of tissue-metamorphosis—cicatrization—had now become inaugurated, and the wound-edges rapidly became approximated, shutting from view the deeper scope of operation. We have a positive assurance of the great adaptability of the use of bone-chips in bone-defects, not only in the medulla of long bones, but also in their extremities which have direct communication with a joint-cavity. It is also worthy of notice that granulating wounds can be kept aseptic for weeks, provided that surgical cleanliness be strictly observed.

MEDICAL PROGRESS.

Hemiatrophy of the Face with Oculo-pupillary Phenomena in a Case of Unilateral Syringomyelia.—Dejerine and Miralliė (*Compt. Rend. Hebdom. des Séances de la Soc. de Biologie*, March 15, 1895, p. 155) have reported the case of a woman, fifty-seven years old, who from the age of twenty-eight presented muscular atrophy of the left upper extremity, gradually attaining a pronounced degree, with preservation of common sensibility and loss of thermal sense. Upon the right side muscular atrophy was scarcely perceptible, although the sensory dissociation was present. The right scapulohumeral articulation was the seat of an arthropathy. Kyphoscoliosis was present, with exaggeration of the knee-jerks. The left half of the face was distinctly less well developed than the right. The palpebral fissure was smaller on the left, both vertically and laterally. The eye-ball appeared the smaller, being deeply seated within the orbit. The left pupil was contracted and reacted to light and in convergence. The right pupil was moderately dilated and reacted in convergence, but not to light. The visual field was contracted in its upper half. The interior of the left nasal cavity was flattened and its orifice contracted. The left naso-labial field was more distinct than the right. The color of the skin was normal except over the left malar bone, where it was more deeply red than upon the right side. The wrinkles upon the forehead were less pronounced on the left side. The skin and subcutaneous tissues were more resistent and more dense upon the left than upon the right side. The muscles of the face appeared not to be atrophied, and the tongue was of normal thickness and consistence. The bones of the left side of the face were flattened and smaller than those upon the right side, and the teeth were largely wanting and carious. The beard was less developed upon the left; the eyelashes, on the contrary, were more numerous on this side. The hemiatrophy of the face was first noticed at the age of thirty. Tactile sensibility was preserved, though slightly diminished as compared with the right side. Painful sensibility was also diminished, and likewise thermal sensibility, both upon the cutaneous surface and upon the mucous membranes. Hearing and vision were well preserved upon the left, but taste and smell, on the contrary, were impaired. Tears appeared more readily and more abundantly upon the left than upon the right. The left nasal cavity remained dry, while the right was normally moist. The injection of one-sixth of a grain of pilocarpin nitrate was followed by sweating upon the right side of the face, while the left remained unaffected. The temperature was lower on the left side than upon the right, and constant sense of cold was felt.

A Modification of the "Invagination"-method of Operating for the Radical Cure of Hernia.—At a recent meeting of the Philadelphia Academy of Surgery Dr. John H. Packard detailed a method of operating for the radical cure of hernia, which consists essentially in the invagination of the isolated sac.

The hernia is exposed by a curved incision describing a semicircular flap of ample size. In this manner the cicatrix is carried away from the seat of trouble, which is afterward covered in by sound skin. The sac is laid bare and isolated from the external ring down to its tip. Sometimes it is better to empty it during this process, which may often be accomplished by tearing with the fingers. It is well to begin the isolation at the ring and to proceed downward. In order to secure control of the empty sac a silk thread is now passed through its wall at either side; the two ends of each are left long and caught in hemostatic forceps. With the forefinger of the left hand the tip of the sac is inverted and pushed up as far as the internal ring, or as near it as possible. Next, a slightly curved needle, with an eye near the point, and armed with a thoroughly sterilized silk thread, is passed up along the finger as a guide, to be pushed out at one side of the tip through the tendon of the external oblique muscle. One end of the thread being caught, the needle is withdrawn slightly, and again pushed through the tendon at the other side of the tip. The other end of the silk thread is now detached from the needle, which is wholly withdrawn, and the two ends left slack are caught together in a hemostatic forceps. Now, by means of the two lateral threads, and by grasping in the fingers, the doubled sac is drawn down carefully, and with a small curved needle a fine silk suture is passed through it from side to side, from below upward as far as possible, and then from above downward, so that its two ends, when drawn tight, will crumple up the sac into a solid mass. These ends are tied and cut off short. The lateral threads are now removed, and the other silk thread is drawn up tight, pulling the plug formed of the sac into place at the internal ring; its two ends are tied on the outer surface of the tendon of the external oblique and cut off short. The skin-flap is laid over in place again, the wound closed by sutures, and the ordinary antiseptic dressings applied.

The patient is kept in bed until the wound is completely healed.

Rupture of the Spleen from Vomiting.—Munson (*Yale Medical Journal*, 1895, vol. 1, No. 6, p. 256) has reported the case of a man, about twenty-three years old, who had been suffering for three months from a low but intractable form of malaria. He had on several occasions been treated, with temporary improvement, but had each time suffered a relapse on re-exposure. He was seen at the inception of the febrile stage of an attack, after a chill of moderate severity. He was put to bed and given five grains of phenacetin for fever and headache, and half an ounce of magnesium sulphate for obstinate constipation. The ingestion of the medicines was at once followed by great pain, referred to the epigastrium, and by violent and incessant vomiting. In the course of an hour the man was profoundly collapsed and almost pulseless, vomiting and hiccoughing being continuous, and there was burning pain in the stomach, with purging. Death took place within a short time. Upon post-mortem examination the whole peritoneal cavity was found filled with serum and clotted blood. The left iliac fossa contained a firm clot as large as a soup-plate, and another of similar size covered the spleen, which was of semi-fluid consistency and greatly enlarged, weighing three-and-one-quarter pounds. Its capsule was torn and the splenic tissue was fissured in two places. One of the lacerations involved a large branch of the splenic artery, and from this the fatal hemorrhage had taken place. The stomach was slightly reddened and congested at its pyloric extremity and presented evidence of a moderate catarrhal condition. The liver appeared to be in a state of beginning lardaceous degeneration. The intestines, kidneys, heart, and lungs were normal. Careful chemic and microscopic examination of the vomited matters, of the gastric contents found post mortem, and also of the contents of the jar from which the magnesium sulphate administered had been taken, was made, but failed to demonstrate the presence of irritant mineral poisons or oxalic acid.

The Influence of Pregnancy upon Dental Caries.—As a result of a study of the teeth during pregnancy, PETERSON (*Dental Cosmos*, 1895, No. 4, p. 269) arrives at the conclusion that dental caries is peculiarly liable to occur at this time. He defines such caries as a condition characterized by molecular disintegration of the normal constituents of the teeth as a result of the action of certain pathogenic micro-organisms which produce lactic acid, which in turn decalcifies the enamel and exposes the dentine to the attack of the bacteria. It is believed to be impossible that lime-salts are abstracted from the teeth to supply the needs of the growing fetus. More than enough phosphates are ingested to supply the needs of both mother and child ; hence the maternal teeth do not suffer from lack of nutrition. During gestation osteophytes are found, showing an excess of lime-salts in the system. The true explanation must be looked for in some change in the oral secretions, which thereby furnish a more favorable soil for the development of the micro-organisms. There is evidence to prove that the acidity of the saliva is increased during pregnancy, probably through changes in the blood, whereby its alkalinity is diminished. The analogy between this and the lithemic condition is striking. Vomiting of pregnancy, while it may to some extent aid, cannot be considered a potent factor in the production of caries. Neglect of the teeth cannot be proved to be more prevalent during pregnancy than at other times, and therefore should not be considered among the causes of caries.

Brachial Neuritis from Ment poisoning.—At a meeting of the Schlesische Gesellschaft für Vaterländische Cultur in Breslau, held some time ago, MANN (*Deutsche medicinische Wochenschrift*, 1895, No. 11, supplement No. 7, p. 46) reported the case of a woman who was one among sixty made severely ill by the use of meat obtained from a diseased cow. For three weeks severe gastro-intestinal disturbance was present, and subsequently there were headache, general weakness, and paresthesia of the extremities. Finally severe neuralgic pains appeared in the right arm, which were followed by weakness progressing to paralysis, involving the deltoid, biceps, brachialis anticus, and supinator longus, and in slighter degree also the triceps, infraspinatus, latissimus dorsi, and all of which presented partial reaction of degeneration. The muscles of the hand and forearm were uninvolved. The nerve-trunks were tender upon pressure, and the shoulder-joint was sensitive to touch, so that passive movement was almost impossible. There were no sensory symptoms.

Premature Labor Successfully Induced Three Times in the Same Woman.—MARDUEL (*Lyon Médical*, 1895, No. 6, p. 182) has reported the case of a woman with a contracted pelvis, in which the first pregnancy was terminated with difficulty after the application of forceps, the child surviving. Three years later a second pregnancy was successfully terminated by the induction of premature labor, and three and five years later, respectively, the third and fourth pregnancies were similarly terminated.

Cramps as a Sign of Diabetes.—SIR BENJAMIN WARD RICHARDSON (*Asclepiad*, second quarter, 1894–'95, p. 162) calls attention to the occurrence of cramps in the lower limbs in cases of diabetes. They are rare by day and most common at night. They are very painful although not of long continuance. They occur principally in the muscles of the calf of the leg, but they may also involve other leg-muscles and, at times, even distant muscles. In conjunction with this condition there is sometimes a painless motion or twitching of the leg-muscles, observable mostly in the early morning after good sleep, and lasting two or three hours, but passing away during the day. These movements may number thirty or forty in the minute.

THERAPEUTIC NOTES.

The Disinfection of Tubercle-infected Houses.—As the result of an inquiry into the disinfection of houses infected with tuberculosis, DELÉPINE and RANSOME (*British Medical Journal*, No. 1781, p. 349) conclude as follows : The disinfection of rooms that have been contaminated with tuberculous products cannot be secured by means of the fumigation-methods such as are generally used at present. Sulphurous acid, chlorin, and euchlorin, as used under supervision by experienced municipal disinfectors, have proved practically useless. The only other method of disinfection that seemed to promise more satisfactory results was the direct application of a solution of chlorinated lime to the walls to be disinfected. This method has so far given satisfactory results, but is attended with discomfort on the part of those who have to carry it out. Light is, in the case of the tubercle-bacillus, as it has been proved by several observers to be in the case of other organisms, the most important natural disinfecting agent.

Subcutaneous Injection of Oil for Stiffened Joints.—SIR BENJAMIN WARD RICHARDSON (*Asclepiad*, second quarter, 1894–'95, p. 164) relates that in two instances of stiffened joints in which the inability to move the parts appeared to depend upon rigidity of the tendons and muscular sheaths, he injected, subcutaneously, olive-oil into the structures and with some success. He found that a fluiddram of oil could be injected around the knee-joint without causing inflammation or discomfort. In one instance in which the elbow was thus treated the patient obtained, for the first time, some degree of movement after six months' entire rigidity from fixation.

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THE LIMITS TO THE INDECENCIES OF SCIENCE.

THE tide of pornographic and scatalogic literature has apparently not yet reached its ebb. Science, like fiction, is passing through an epidemic of "realism;" she must needs tear off the last shreds and patches of reserve and decorum that a preceding age valued, and exhibit to a prurient professional eye all the nakedness of perverted sexuality and all the LESBIAN rites of exhausted courtesans and roués. This is done under the disguise of a contribution to psychiatry; whereas, in fact, it is only a literary orgy in the companionship of the satyrs of our modern civilization.

The full pace was set by KRAFFT-EBING. His honored name and scientific attainments were the guarantees that much could and would be forgiven him. His treatise on sexual psychopathy, written in the cold analytic German style, and preserving a strictly scientific and pedantic tone, had, nevertheless, a strangely forbidding and unwholesome aspect in its American translation—a translation, perhaps, not unequivocally demanded by strictly scientific interests. It is not too much to say that the book was merely tolerated in America; that, if it were welcomed in some quarters, it was as forbidden fruit, which the filchers could enjoy all the more because they would never have dared themselves in their own respectable communities to have cultivated it. They thanked the German in their hearts at the same time that they wondered at his temerity; and they marvelled at the differences between races and countries that this book indicated, when they saw with astonishment the name of the foremost German alienist on the title-page of a monograph the like of which would probably relegate a native American author to the gehenna of the unclean.

The true quality of KRAFFT-EBING'S book, in its American undress, was curiously shown by the interest that was taken in it by lay readers. We are credibly informed that it was circulated about in lawyers' offices, we presume, by irresponsible parties; and such is the thirst of lawyers for knowledge of things unlawful that the book had, it is alleged, an extraordinary run among them. In the case of one pornologic work, which shall be nameless, the agents in some instances were young men, who hawked the book about among the lawyers in a shy but knowing way, as we once witnessed, playing the part of purveyors of what, to themselves and to their customers, seemed to be a rare bit of Rabelaisian indecency masquerading as medico-legal science. On that occasion we realized that if to the pure all things are pure, to the impure books of the class of KRAFFT-EBING'S are decidedly impure.

It was to be expected that KRAFFT-EBING would have his imitators. The field was comparatively new and inviting (?). No one man could be permitted to monopolize the indecencies of science. The subject is as wide as the world; as deep and corrupt as the human heart. Its sensationalism, its unsavory savor, its dramatic incidents, its realistic and uncouth horrors, its crude animalism all were suited to tempt the pen of every aspiring Zola in medical literature. The attempts, however, have been in the main insignificant until the recent appearance of a German work by SCHRENCK-NOTZING, who describes himself as a practising physician in Munich, and who evidently is a willing disciple of KRAFFT-EBING.

SCHRENCK-NOTZING'S book has the distinction of some originality, and being written entirely from the practical standpoint, *i. e.*, the treatment of sexual perversion by hypnotic suggestion, gives us an opportunity to express some opinions on what we conceive to be some of the limits to this class of literature.

It is evident to us, from reading his book, that SCHRENCK-NOTZING has introduced an especially dangerous topic in hypnotism as a therapeutic agent for the unspeakable mental states of these children of darkness. What concerns us most is the danger involved to the physician himself who shall pursue this author's practice—a danger that SCHRENCK-NOTZING himself has evidently not avoided. In plain language, the advice given in this book is simply that the physician himself, taking part in a more or less libidinous séance, shall *suggest* to the hypnotized pervert the substitution of one form of immorality for another. When one considers the already debauched character of these perverts, and then considers the moral attitude of a physician who, putting himself *en rapport* with one of them in an artificially produced psychosis, takes the opportunity and the responsibility of instilling into such a mind at such a time the suggestion of any form of immoral sexual indulgence whatever, one is impressed at once with the enormity of the fault. There is involved in such a prostitution of the professional character not only the gravest ethical but also the gravest medico-legal question. In this country such an undertaking, if known, would expose a physician to more than mere professional obloquy. And yet this is the course advised by the author in several pages of his book. With a cynicism of which he himself appears to be unconscious, he argues for a physiologic indulgence, ignoring all moral considerations, and then chooses for the field of his operations the too impressionable minds of those whose lives are already wrecked by all the insane caprices of abnormal lust. When the physician thus makes himself the high-priest in a ritual that surpasses in iniquity the Babylonian rites, we think that he has more than exceeded the limits to the indecencies of science.

Again, as to the form in which these works are cast. The mere fact that they appear as monographs is one of their most objectionable features. We do not assume to dictate the limitations for a strictly scientific treatment of any aspect of psychiatry. We recognize that sexual perversion is a strictly legitimate topic. But at best, or worst, it is a subordinate and a rare phenomenon of disordered mental states, and should find a proper and subordinate treatment, in carefully guarded language, in general treatises. At best, it always comes perilously near to mere vice and crime; it always panders to a prurient curiosity that is too likely to be mistaken for a scientific interest. The more it is detailed the less scientific and the more vulgar and vicious it becomes. When it is dragged out from its natural depths and rendered conspicuous in special brochures, and illustrated like a police gazette with the minute narratives of the lives of trollops, and lascars, and imbeciles, and moral idiots, it exceeds the limits of toleration that even the most pronounced scientist must put upon the description of the indecencies and nakedness of human nature.

Finally, as to the sale of these books. That they are commercial ventures, of extraordinarily good selling qualities, must be evident from their character and from other considerations. It is pruriency, not a coldly scientific interest, that makes them sell. Under certain circumstances they lose instantly what scientific character they may have been supposed to possess, and pass at once into the class of forbidden literature. The restriction of their sale "to the profession only," as in some cases it has been limited, by no means answers the objections to this class of works. The profession has its morbid tendencies, and by becoming physicians men are not exempt from the evils so vividly depicted in these books. Moreover, as thousands of men with medical diplomas do not hesitate to become enemies of their guild, prostituting their knowledge and office to every form of quackery that greed has begotten, so men who in name only are members of the profession will be found plenteous enough to become instruments for scattering this rotten literature among laymen. We doubt whether the mails can be legally employed for such a distribution of them. They drag, as it were, the whole medical profession, from which they assume to emanate, into a compromising position. They subject that profession to the risk of having some of its ostensible literature put upon the *index librorum prohibitorum* of the law. This is a grave matter. It involves a risk both to the liberty of the medical press and to the clean reputation of medical writers. It would be a most unfortunate precedent to have a medical treatise prohibited, because it might lead to a supervision of medical literature by public authorities, and this would be not only irksome but disastrous. Hence, the whole profession is interested in curbing with the force of an awakened professional opinion the commercial ventures of those who so far imperil its liberty and its reputation as to dare to write, translate, publish, or sell a book that transcends the limits that must be put to the indecencies of science.

TOPOGRAPHIC MEDICINE AND HEADACHE.

Of the influences promoting civilization and the elevation of nations to a common standard of social and personal well-being, art and science are certainly the chief. It has long been the boast of music that her language or method of writing is common to all nations. The score of a Beethoven symphony is read by all musicians alike, regardless of race or tongue, and the psychic life that that music portrays or arouses is recognized by the music-lover of every nation and generation. So it is with painting, with sculpture, and with most of the other arts. Their influence is to break down the walls of national prejudice and racial habits and bring men to a recognition of a unity of all life and the universality of all high ideas.

In science the same great factor of civilization is also visibly and powerfully at work. There is but one science of geology or of astronomy. Spectrum-analysis is the same in Europe or in America, and chemistry has no geographic peculiarities. Newton, and Darwin, and Helmholtz, and Wallace, and Lord Kelvin belong to the world and discover truth for the world.

We flatter ourselves, and justly so, that it is so with that branch of science called medical. Nothing touches us more intimately than disease, and he who discovers the cause and cure of a dread malady at once becomes the honored of all nations. The life of the child in Asia or Africa may to-day be saved by the scientific labor yesterday of a laboratory-worker in Germany.

This law holds especially as regards certain diseases or classes of diseases. The scientific medical world has its attention riveted upon microbic diseases, and no smallest discovery of a truth in reference to such diseases can be made in any part of the earth without its instant utilization by almost every physician of every land. It is in a less degree true of surgery, but the degree is so little less that the principle may be held to obtain fairly well. National or racial peculiarities and prejudices as to surgery are not by any means impossible of discovery despite the varied transmigrations of students and of literature through and past all geographic boundaries. A little illustration of this came to us recently in the discovery that English medical men, as a rule, know and care little or nothing about the surgical uses of hydrogen dioxid, while in American practice this substance is greatly used and valued.

There are, however, a number of diseases and aspects of medicine that seem absolutely to contradict the law to which we have alluded. Limiting our view to the field of non-microbic and non-surgical disease, we find most astonishing proofs of insular and geographic limitations. Many illustrations will at once occur to all travellers, or to students of the literature of internal or clinical medicine. Among these illustrations we shall single out one that exemplifies to a sad degree how far we yet linger in barbarism, how science, properly speaking, has almost utterly failed to show a trace of universality or of a civilizing influence.

We allude to the diseases, or rather, of course, the symptoms of disease, passing under the name of headache and sick-headache. There is hardly a family in the civilized world that has not at least one, and probably several, members afflicted with these tormenting and life-wrecking affections. The varieties of headache are very numerous, and into this subject we cannot go; but whether of one kind or another there is no functional disease or symptom of disease that is so widespread, none that (as usually treated) is so obstinate, none that causes such tragedy and so many ruined lives, none that so certainly reduces the vital powers, and thus prepares the soil for the incoming of other and more fatal diseases. There is in every thousand people a very high proportion who have thus suffered for years or for the greater part of a lifetime, and who have been treated by many physicians without cure. Headache and sick-headache are beyond dispute veritable opprobriums of the elder medicine.

There is a cyclopedia of medicine—Quain's—that by general consent epitomizes for the English-speaking people, at least for Englishmen, the science of practical medicine "up to date." Its sale has been immense, and in the last year a new, entirely rewritten edition has appeared and received the universal approval of all critics. Let the interested reader turn in this work to the articles on "Headache" and "Sick-headache," and read them carefully. Then let him read the article on the same subjects in Pepper's *System of Medicine*, or, better yet, the one by that veteran neurologist, Seguin, in a representative American work, Keating's *Encyclopedia of the Diseases of Children*. With what a feeling of disgust will he arise! This, then, is the "science" of medicine! Is it true that in crossing a body of water a "science" can become so amazingly changed? From beginning to ending of the two articles in Quain not a word is said or even hinted as to the ocular etiology or treatment of these affections, whilst Seguin evidently traces the origin of the vast majority of all headaches to eye-strain.

We cannot stop to inquire whether Quain's "science" is due to pure ignorance or pure prejudice, or even, perhaps, to a remarkable mixture of both—or whether Seguin's "science" is due to childish enthusiasm and hobby-riding. But, not to shirk the question and to make our position clear, we will say that it is our deepest conviction that the science of QUAIN is unscience and pseudo-science, whilst that of SEGUIN is genuine science, a profound, although sadly ignored, truth.

What we wish to emphasize is the fact of the absolute contradictoriness of the two "sciences," and the evidence thereby shown of the influences that govern the acceptance of a truth by two large bodies of men living in two different countries, separated only by the distance of a week's journey, men among whom there are many friendships, and upon whose library-tables lie each other's scientific journals. Some twenty years ago a great American physician, DR. S. WEIR MITCHELL, followed soon by others, began preaching the truth of the ocular origin of much headache. Hundreds of American physicians to-day know that truth, and use it to the immense benefit of their patients. Every good refractionist knows the test of the accuracy of his work is the cure of his patient's headache, and at least one oculist we know avers that of many hundreds of cases of sick-headache he never saw one not cured purely by ocular treatment.

Be all this as it may, why is it that in European treatises on headache, and notably in the most recent and authoritative English encyclopedia of medicine, not a word is said as to that etiology and that treatment of a most grievous and widespread affection, which with many American physicians constitutes the very heart of the matter. (We do not, of course, deny that other causes exist besides eye-strain. For the present "that is another matter.")

Can this strange phenomenon be accounted for? We think it can be, and very easily. It is but another corollary of the great law summarized in the apothegm, *Ex oriente lux*. The march of civilization has always been westward, and it is but natural that the younger occidental civilization should receive its psychical as well as its physical light from the more orientally placed countries. In the very nature of things it must be so. But too habitual an acceptance and practice of the law results oftentimes in an invidious rejection of light that may come from the Occident to the Orient, and thus differences arise that give evidence of prejudice and self-will rather than of a desire for light whencesoever it may come. Such unscience and prejudice on the part of our more easterly neighbors exist in reference to headache, and one may add as to the nature, diagnosis, and influence of eye-strain generally. Because the truth happens to be emphasized by Americans it is none the less a truth.

EDITORIAL COMMENTS.

An Ethical Conundrum.—With the admitted proviso that the fundamental principle of medical ethics is the good of the patient, the following question is of interest: A patient is recommended by a general physician to a specialist, to a surgeon, or an aurist, or, let us say, to an oculist, for symptoms that indicate eye-strain; the oculist at once sees from the condition of the retina that the patient is suffering from profound systemic disease and that vision, as also life itself, is in danger. An indirect inquiry reveals the fact that the general physician has never made a urinary analysis. The patient has all confidence in the family physician, and that confidence, of course, must not be disturbed. In the most courteous terms the specialist, by letter, asks the family physician to look the patient over, suggests that the condition of the eyes may indicate renal trouble, and begs that a reply may be sent as to the diagnosis made and the treatment instituted by the general physician. In quick time the reply comes, very curtly saying that the patient has no disease, and the patient volunteers the remark that the physician plainly intimated that he wished "no outside advice as to the care of his patients." There can be no doubt that there are physicians who never make an analysis of the urine from one year's beginning to its ending. The question in ethics is as to the specialist's duty in any such an instance as that cited. An incautious word on his part, a request direct of the patient for a sample of urine, a treatment of the systemic disease by the specialist, a further suggestion to the general physician, etc., would lead to most unpleasant consequences—and that is surely putting it mildly enough. Not to do something for the patient's condition would seem much like permitting the patient to die without raising a finger. The "business doctor" would perhaps solve the difficulty quickly enough by treating the special organ under his charge, by ignoring the systemic source of the local disease, by notifying the family physician, and then "washing his hands of the affair." But that solution does not satisfy any except those whose motto is, "Medicine is a business." What should the specialist do?

The Position of the Testes.—The highly interesting lectures of DR. GRIFFITHS, selections from which are reproduced elsewhere in the forelying issue of THE MEDICAL NEWS, give promise that sometime may be solved the mystery of the "descent of the testes." We have never seen any allusion even to the existence of this mystery. The question—why the descent? so far as we know, has never been asked by any anatomist, surgeon, or scientist. The fact is another instance of the old truth that it is the mystery that lies nearest ourselves that we are the least curious about. The search for the North Pole, the problems of spectrum-analysis, of the heart of Africa, of the motion of the stars, have seemingly weighed heavily on men's consciences, but the strange and seemingly absurd externalization, if one may so speak, of the testes, appears never to have aroused his curiosity. Writers and lecturers on surgery and physiology seem to have accepted the fact, utterly indifferent as regards its anomalousness, and careless as to its cause. Why in the course of biologic evolution did the forces controlling that cosmic process (conscious or unconscious, free or inexorably necessitated, matters not) arrive at the present plan? In the beginning, of course, as is evidenced by their primary position in the fetus, and by their permanent retention in some animals, the position was within the abdominal walls. How astoundingly strange it is that the primary plan had to be changed, and the voyage downward and outward decided upon. Why this voyage? This is the question that we think would have puzzled anatomists and surgeons and biologists, and kept them asking it so persistently that much scientific literature would have been filled with its echoes. Did any one ever ask it, or try to answer it? It would seem that the original location of the organs was infinitely safer, and that the resultant dangers of hernia would have been avoided. It is most curious that in rutting animals there is a partial externalization of these organs during the season of sexual excitement, and that in these animals, as well as in man, spermatogenesis is prevented by pelvic retention.

The Cause of Scientific Vivisection is seriously endangered by the indiscreetness of some of its advocates. In a characteristically bright and incisive editorial in the *Medical and Surgical Reporter* the name anti-antivisectors is given these extremists, and its appropriateness is evident when one considers the strong "personal note" thrown into their communications. The old Puritans were said to hate bear-baiting, not at all because it gave pain to the animal, but because it gave so much pleasure to the spectators. It begins to be evident that the anti-antivisectionists have more interest in baiting the antivisectionists than they have in the cause of vivisection. The *Reporter* editorial, together with two recent letters in the *Boston Medical and Surgical Journal*, is not by any means the only intimation that could be adduced that many well-meaning physicians have allowed themselves to be nagged into a position quite as extreme and indefensible as that of the most rabid antivivisectionists. One extreme of course naturally begets another, and that of some of the antivivisection-dogmatists is certainly far from right. But these people are not scientifically educated, and their one-sided polemic is therefore to a certain extent excusable. Not so, however, the equally rabid and emotional extremism of some anti-antivisectionists, and it is perfectly evident that their public anti-ics have not seldom encouraged the very extreme they denounced with such startling injudiciousness. To win to our side a large part of the as-yet undecided profession, and a much larger part of the undecided lay-world, we must be calm, just, impersonal, and considerate of popular prejudice. One of the lessons we have yet to learn is that much of the popular prejudice against vivisection is of our own creating, is decidedly our own fault—as the exhibit of the anti-antivisectionists illustrate. *Surtout Messieurs, pas de zèle!*

The New Treatment for Tuberculosis and Carcinoma.—The newspaper world seems to have been set afire by the reported recommendation of pilocarpin as a means of treating tuberculosis and carcinoma. We are not yet in possession of the evidence upon which this display of emotion depends, but we feel a little dubious as to the judgment of newspaperdom in this particular department of science. Reliable remedies for the treatment of disease do not usually reach either the public or the profession through this channel. What Dr. Waldstein has done we are as yet unable to say, and we would prefer awaiting his report before making further comment. That pilocarpin is a powerful and useful drug all will admit who have had any experience in its use. It has been largely used here in Philadelphia as a result of the influence of two great clinicians, Da Costa and Bartholow. To Da Costa belongs the credit of having recommended its employment in the treatment of erysipelas, with results that seem almost specific. Bartholow constantly lauded its usefulness to his classes with characteristic vigor and conviction; and it is only within the last few months (see The Medical News, December 15, 1894, p. 660) that he insisted upon the utility of pilocarpin as a depurant in the treatment of various morbid conditions. We would be glad to hope that we have in this drug such a powerful weapon as current reports suggest it to be, but we prefer to wait and see.

"***For the Medical Profession Only***," by no means excuses the sending of disgusting nude pictures to every physician's address through the mail, unsealed. Instead of excusing, it aggravates the offence, because pruriency is piqued by the very device. The mail of a large majority of physicians is delivered at the residence-address, and not at the consultation-office. A high-handed devil-may-care answer to criticism of such doings plainly says to the medical profession: "This matter of the use of the governmental mails for the dissemination of purely commercial advertisements, made in such a way that the reputation of the medical profession is used and bandied about and jeopardized—this has to be stopped!" The dissemination of genuinely scientific medical literature has already been endangered by this abuse, and should the public, however mistakenly, visit upon us the indignation of laws restricting or forbidding the use of the mail for legitimate medical literature, it would be at once a public and a professional calamity. But this calamity would be due to our endurance of and indifference to the impertinence of advertisers who fill the mails with filth that passes under the pretext of being medical, but which is anything but medical.

Of Interest to the Profession, or so their authors represent them to be, are such notes as the following, which come with nearly every mail to the editorial offices of medical journals. We accede in this instance to the request, but omit "the Professor's" name. The letter comes on official letter-heads, and is signed by "the Private Secretary"—an indication of most commendable modesty—and reads as follows :

> Dear Doctor :—Please note in the next issue of The News that Dr. —— —. ——, of ——, was appointed —— in —— ——, at —— College Medical School, and has given weekly lectures at the school since his appointment, to a highly interested and entertained class. Last Thursday the class and several outside M.D.'s went to the doctor's office, and were astonished and facinated (sic) for two hours.
>
> The next lecture, etc. etc.
>
> Do not hesitate to call my attention to anything that will interest the professor, and believe me
>
> Very respectfully,
>
> ——— ———,
> Secretary.

The Toothless Base-Drummer.—Commenting on the circular-letter recently issued by the Philadelphia County Medical Society concerning nostrums, the *Journal of the American Medical Association*, we think, confuses the issue somewhat by bringing charges of improper motives against the committee issuing the letter, and alleging that misstatements were made by the Philadelphia delegates in their reports. As to the first of these charges, it may be dismissed with the smile that it deserves. It has nothing to do with the question, and it can have no weight with those who know the character of the members of the committee. As to the second allegation, the *Journal* says that the delegates make a "direct misstatement" in reporting that the decision of the Judicial Council on the charges brought by the Medical Society of the State of Pennsylvania against the Trustees was not communicated to them ; the reason it gives being that Dr. John B. Roberts, who signed the report of the delegates, is likewise a member of the Council !

Many strange things nowadays are "considered reputable," and it may somewheres and sometimes be looked upon quite as a matter of course that one should reveal an official confidence ; but it is not so always and everywhere. Dr. Roberts, being bound by the rules of the Council not to make known privately what the Council has hitherto declined to publish openly, has preserved silence upon the subject ; and neither the Philadelphia delegates nor any others, except, possibly, those who have the *Journal's* confidence, yet know the decision of the Council. The publication of that decision is highly desirable.

In the issue of the *Journal* of April 13th is a letter upon this question of nostrum-advertising that is as charming an example of logical *nonsequitur* as we have seen. It brings out "into the open" the only argument the nostrum-lovers and code-breakers have, that, viz., the practices of men are worse than their ethical theories, laws, or codes, and that the ethical codes, laws, and religious theories should, therefore, be abrogated, in order that theory and practice may be harmonized. Men are not to be praised for having a rule of life that is better than their daily habits, but in the interest of "consistency" they should utterly smash the ideal. With this delightful naïveté runs also the charge that although the writer knows absolutely none of the men of the Philadelphia County Medical Society, he still can judge of them "by what he knows of others," and consequently he is cocksure that the Philadelphia men are the vilest of hypocrites, breaking every law of the Code, as to patents, nostrums, etc. This reminds one of the splendidly brilliant flash of logic, repeated with hilarious innuendo by an esteemed contemporary, that the opposition to nostrum-advertising in a journal controlled by an association whose Code condemned nostrums is due solely to the fact that a lay publishing-house once failed to secure a contract for publishing for which it had bid.

"I knew a man in Oregon" (or was it in California ?) said Artemus Ward, "who had not a tooth in his head —not a single tooth—and yet that man could beat the base-drum better than any man I ever knew."

SELECTIONS.

RETAINED TESTES.

In the first lecture an account was given of the changes that the structure of the testes undergoes from early life to old age, and of the influence, in addition to producing spermatozoa, that this organ exercises upon the development and growth of the accessory sexual glands, and also upon the formation of the male sexual characteristics. To-day, after reviewing the position that the testes occupy in different animals and in man, I propose to give an account of the structure of the testes when they fail to reach the end of their destined course, and to point out the function, if any, which the testes under such circumstances are capable of performing.

In the study of the comparative anatomy of the male generative organs in the mammalian group of vertebrates there is nothing, perhaps, more striking than the varied permanent positions that the testes occupy in the several classes or groups of animals. In the monotremes, in the elephant, and in the cetacea the testes remain in the abdominal cavity just below the kidneys ; in a few artiodactylæ they are found in the groin ; and in the remainder, which comprises the majority, they occupy the dependent scrotum, be it inguinal or peritoneal.[1] Further, in the rutting animals, such as the hedgehog, the testes are found in the groin during the rutting season and are withdrawn into the abdominal cavity at the end of that period, where they remain until the return of the next period of rut. Thus, in these rutting animals the testes pass outward into a sac of peritoneum—the tunica vaginalis—in the groin at the onset of the rutting season, and backward into the abdominal cavity at its termination ; and, as will be pointed out later, these organs only attain their full size and full function when they reach the furthest point in the course of their descent, dwindling and losing their spermatozoa-producing powers when withdrawn into the abdominal cavity. The testes, then, occupy—(1) in some animals a permanent position in the abdominal cavity below the kidney; (2) in others they occupy at all times the scrotum, be it inguinal or peritoneal—the serous cavity may or may not then be shut off from the general peritoneal cavity; and (3) in others (rutting animals) they are in the scrotum during the period of sexual activity (rut) and in the abdomen during the period of sexual inactivity (non-rutting period). John Hunter, in his well-known monograph on the *Position of the Testes in the Fetus*, gives an account of the place of origin of the testis and describes the mechanism by which, in part at any rate, it is made to travel from its protected and concealed to a more unprotected and exposed position. He notes that the mechanism not infrequently fails, both in man and in the domesticated animals, to convey the organ to the termination of its destined course—the scrotum. The testes on one or both sides may fail to pass out of the abdominal cavity or to go beyond the external abdominal ring. The commonest situation in which an undescended testis is found is the external abdominal ring; it may pass into the perineum, thus missing the scrotum. More rarely it finds its way into the upper and front part of the thigh.[1] It may also be found in the cavity of the pelvis. Failure in descent of the testis is more common on the right side than on the left, as was shown by Braman. When only one testis remains undescended—whether the organ be in the abdominal cavity, at the internal abdominal ring, or in the groin, the other being in its natural position and well developed—the case is of interest chiefly owing to the concurrence of congenital hernia in connection with the undescended testis and the difficulty of successfully applying an apparatus for the proper closure of the canal and the prevention of the escape of intestine. If, however, the surgeon finds it impossible to adapt a well-fitting and comfortable truss, then the question of operative measures may arise, and naturally the exact structure of the testis, its capabilities of producing spermatozoa, and the influence it may exercise upon the man become of importance. Especially is this the case in those instances, which are not very rare, of incomplete descent of the testes on both sides. When the testes are duly transmitted they acquire, as is well known, their full size and full function; but when they fail to reach their destination they do not attain either their full size or their full function—the production of spermatozoa. This may appear strange, seeing that the testes do in some animals attain their full size and full function when retained in the abdomen or in the groin. It is, however, the fact that, in any given animal in which complete "descent" of the testis normally takes place, the testis, in order to attain its full size and full function, must reach and occupy the terminal part of that destined course. In man, for example, unless the process of descent be fully accomplished the testes attain neither their full size nor their full functional powers. I am aware that this has been doubted, but my own observations quite confirm the view. Further, I have shown in a paper entitled "The Structural Changes in the Testicle of the Dog when it is Replaced within the Abdominal Cavity"[1] that when the testis in the dog is by experiment replaced in the abdominal cavity it soon dwindles and loses its spermatozoa-producing powers, undergoing at the same time certain definite retrogressive changes in the structure of its seminal tubules.

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[1] In all the animals, with the exception of man, and, I believe, the chimpanzee, the connection between the peritoneum and the tunica vaginalis remains as a patent canal into which the vas deferens and the spermatic vessels and nerves more or less project, carrying the peritoneum before them. In man and in the chimpanzee—the only two vertebrates which assume the erect posture—this connection is obliterated at or soon after birth.

It is of much interest to find that the undescended testes, though incapable of producing their special secretion of spermatozoa, yet are capable of exerting their peculiar and important influence upon the growth and development of the body. When only one testis fails to "descend" to the termination of its destined course, the opposite organ having duly reached the scrotum, the person grows, as we often have the opportunity of observing, just as if both organs were in their natural position. The fully descended testicle produces spermatozoa in abundance, and usually acquires a larger size than natural, due to what is called "compensatory hypertrophy." Thus, a person who has one testis natural and in the scrotum, whether the opposite be undescended or absent, is in possession of full virility. But when both testes fail in their descent they, as we have just seen, are incapable of producing spermatozoa, and in consequence the person is sterile. In spite, however, of the imperfection of the organs, such a person acquires all the external bodily characteristics of the male and is in all respects, except in the power of procreating, like an ordinary man. His shoulders are broad, his pelvis is narrow, his beard and moustache and hair on the pubes are well grown, his voice is deep and manly, and his penis is large and well developed, though the scrotum is small and empty; so that the external appearance, except that of the scrotum, would give no clue to the condition. I know of one such person who is well formed and who is capable of erection and emission, but without issue. It is evident, therefore, that the influence of the testis upon the growth and maintenance of the characteristics of the male is a property independent of their power of producing spermatozoa; and the remarkable fact is established that the spermatozoa-producing work of the testes, possibly even their potentiality for that purpose, is not necessary for the establishment of the influence which those organs exert upon the rest of the body. It is further of interest that, although the natural involution of the testis in the aged is unaccompanied by any corresponding change in the system, yet if the testes in an elderly person are removed, the accessory sexual glands, at any rate, are found to undergo changes somewhat similar to those which are observed in eunuchs and in eunuchoid persons.

The function of the testes is, therefore, clearly two-fold—viz., (1) to control and determine the development of the characteristics of the male sex, and (2) to produce spermatozoa for the reproduction of the species. These two functions are usually exercised together, but that the former may be exercised when the latter fails seems to indicate that the production of spermatozoa is the more specialized property and attained with more difficulty. In what manner is this sexual effect of the testes upon the body produced? Is it through the medium of the nervous system as an ordinary reflex, or is it through the medium of some substance produced by the seminal cells (whether they form spermatozoa or not) and absorbed into the system, which by influencing the nerve-centers or in some other way controls growth and nutrition? Brown-Séquard tried upon himself, when he was seventy-two years of age, the effect of the subcutaneous injection of a watery extract of the testes of a vigorous dog two or three years of age, and relates that after five daily injections he lost his feebleness, felt many years younger, and was capable of doing more work. The testicle-extract has since been used in various diseased conditions, chiefly those associated with nervous debility, but only with temporary results. During the last few years a watery extract of the thyroid gland has been administered with signal success in myxedema, in which disease the thyroid gland atrophies and ultimately disappears. The disease myxedema arises from the want of the influence of some unknown substance, which the thyroid gland, as it is supposed, elaborates, upon the nutrition-centers of the central nervous system. It may be that the testis in like manner elaborates, irrespectively of its spermatic secretion, some chemical substance which by a similar influence not only controls the growth and development of the body at puberty, but maintains the manly characters then acquired throughout life.—DR. J. GRIFFITHS, *The Lancet*, March 30th.

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[1] In fox-terriers, which are now so highly bred in this country, failure in the descent of the testis on one side is not at all uncommon, and it is well known that this condition not infrequently happens in horses. The entire horse with one testicle descended and the other retained within the abdominal cavity is so common as to be known as a "rigg."

[1] Journal of Anatomy and Physiology, vol. xxvii, p. 483.

MINISTERIAL INDORSEMENT OF HUMBUGS.

WE are sorry to see the names of Christian ministers and persons occupying important positions in the church circulating through the country indorsing barefaced frauds which are poorly executed and no better than Indian charms. Whenever a minister of the Gospel allows his name to be attached to anything whose advertisements make statements impossible of fulfilment, or contrary to established principles of science, and especially to be mixed up with all sorts of testimonials written obviously by the most ignorant and uncultivated persons, he loses the respect, and justly, of that class of the community which in the long run fixes the estimate in which he is held.

This, together with similar exhibitions of weakness, often accounts for the failure of young men who otherwise give bright promise of other success, and the early retirement of those who, in spite of them, had attained a good standing.

In the interest solely of our readers we advise them to pay no attention to a ministerial testimonial to remedies whose composition is a secret, or which promise positively to cure otherwise incurable or generally fatal diseases. And all the more so if the testimonial contains references to the Almighty and providential direction to buy the medicine. You may be sure then that whatever other effect the remedy has had, it has either weakened or has not improved the condition of the nerve-cells, upon which sound judgment depends.

When ministers go further and surrender their photographs to patent-medicine venders to be used in advertisements and on bottles, they render themselves liable to one of two suspicions: Either that they have an inordinate desire to appear before the public, in which case such extravagant vanity must weaken their influence, or that they have received a compensation for the privilege. For that quacks of all sorts are ready to pay largely for certificates from physicians, for editorial notices, and for the privilege of publishing letters from and photographs of clergymen, cannot be doubted.

Not only do they thus render themselves liable to suspicion, but grieve every truly refined member of their congregations, and every member, in fact, of their denomination who sees their pictures and letters displayed for such purposes. Could many of the ministers know what is said of them, self-interest would lead them to refuse in every case. It should be taken as an insult by every minister of the Gospel of Christ to be asked to furnish his photograph, or to consent to its use, as a part of a patent medicine or any other advertisement.

In one instance the name of such a person was proposed for the pastor of one of the best churches in Methodism. A brother of high character and respectability, noted for his kindness when speaking of ministers, rose and said: "I hope that this brother will not become our pastor." "Why?" said half a dozen voices. He did not reply, but spread before them a newspaper containing the photograph of the minister, in connection with three or four letters, one from himself, interlarded with ascriptions of praise to the Deity for having led him to buy ——— pills. His name was not mentioned again.—*Christian Advocate.*

THE CORRECTION OF REFRACTIVE ERRORS.

I WANT you to know that *errors in the refraction of the eye* are the *most intricate affections of that organ*, and that he and *he only* who has a *profound knowledge* of *optics*, besides having taken a *thorough medical course*, should be intrusted with the business of adjusting lenses to correct these intricate and often complicated anomalies. I am sure that I do not know of so much humbuggery in any profession or branch of business as in this matter of fitting glasses, and I take this opportunity to inform you of it that you may not be imposed upon, as many practitioners all over this country are.

There are several so-called "institutions" in different parts of this country, notably in Chicago and Philadelphia, that are styled "Colleges of Refraction," or other high-sounding names. They give a two-weeks' course and "graduate" the student "*Doctor of Refraction*" or "*Graduated Optician*," as is indicated by his artistic diploma, which he always conspicuously displays.

Many physicians, taking this as an evidence of the necessary knowledge for the performance of this service, recommend these pretenders to their patients, and, besides, are frequently inveigled into giving a certificate of professional ability, attesting their competency, which is frequently published in the family newspaper.

It would be well for all physicians to know that these "degrees" are worthless and have no legal recognizance.

The graduates from these "institutions" are usually jewelers and so-called "opticians," who have no knowledge of the anatomy and physiology of the eye, much less of its diseases and its intricate relations to other parts of the body. They talk as glibly of *myopia* and *hyperopia* and *astigmatism* and *insufficiency of the ocular muscles* as the most expert oculist.

These impostors settle down in all the principal towns and villages throughout the country, or travel from house to house, as many of them do, posing as "*oculist*" or "*graduated optician*" or "*Doctor of Refraction*" with the *nonchalance* of an adept, and obtain business.

If such an impostor would travel over the country adjusting splints to deformed limbs, he would rightfully be arrested under the laws of the State for quackery, although far less injury could be done by tampering with deformed limbs than with afflicted eyes.

It is not necessary for me to state that none of these "graduated opticians," "Doctors of Refraction," or other so-called "opticians," are competent to adjust correctives to such a delicate organ as the eye.

A competent optician can prepare the lens after the oculist has prescribed it, the same as the pharmacist prepares the medicine after you prescribe it for your patient, but when these pretenders assume to correct optical defects they assume more than they can accomplish.—PROF. J. W. WRIGHT to Senior Class of the Ohio Medical University. *Columbus Medical Journal.*

DOCTORS MAY KILL IN SOME CASES!

THERE are few journals, lay, religious, or professional, which will not join the *Indo-European Correspondence* in protesting against the suggestion of the *Civil and Military Gazette* that, in some instances, "an exception may be made to the salutary rule that a doctor's mission is to cure, not to kill." The *Gazette* is of opinion that before long there will be a "legal enactment authorizing medical men to take life in certain cases." The astounding absurdity of such a proposition leads us to imagine that our civil and military contemporary was cracking a grim joke against the medical and religious sections of Christendom. He thinks the cases and the conditions in which medical men may put an end to the existence of suffering humanity can be infallibly recognized and categorically laid down and defined. Medical men can, however, only prognose favorably or unfavorably; and although in a few extreme cases we may be able to anticipate positively a fatal termination, yet there are a very large number of cases presenting the most unfavorable aspects, and which, according to our limited mortal ken, appear to be in the most hopeless conditions, and which withal mend and recover. The ever-increasing additions to medical science tell us that many diseases which though now regarded as absolutely fatal or incurable may, in a few short years, come within the scope of medical relief and cure. Are we then to entertain seriously the idea that, because our limited knowledge of the mysteries of life incline us to the belief that such and such a suffering mortal is incurably ill, his life may be speedily terminated with benefit to himself and others? Had such a preposterous enactment been made a few years ago, how many persons who are now in health and vigor, or who are at least leading lives of usefulness and activity, would have been consigned to untimely graves? Is it not by acting on the principle of "while there is life there is hope," and by the dogged perseverance of medical men even in the apparently most hopeless cases, that discoveries, either made by chance or scientifically deduced, have been effected, giving relief and life to the sufferers and to those who may be similarly affected in the future? It is, however, quite unnecessary to give any prolonged or serious consideration to the suggestion so surprisingly put forward by our contemporary, for no Christian Government will ever commit itself to such an enactment to persuade medical men to determine whether their unfortunate patients are to be allowed to take their chances of living or to be hurried into eternity.—*Indian Medical Record.*

GRAND OLD MEN OF MEDICINE.

DR. R. BAYNES, of Rockland, Maine, who is still in practice at the age of ninety-nine, should be added to the list of "grand old men" of medicine. He is said to live on "Graham diet," which is a form of vegetarianism; he eschews potatoes, but eats fruit. His drink is almost entirely water, milk, and chocolate; he condemns the use of tea, coffee, liquors, and tobacco. He has almost a perfect set of natural teeth, and his sight is excellent. Like most old men who live to a great age, Dr. Baynes has a "fad," to which he attributes the chief part in prolonging his life. This is the avoidance of beds. Except when away from home, he has not slept in a bed, or even on a mattress, for over fifty years. He has a reclining chair of iron framework over which he spreads a few blankets and rugs. But perhaps the oldest medical man in practice is, if a Dalziel telegram speaks correctly, Dr. Boisy, of Havre, who is one-hundred-and-three years old. He goes, it is said, his rounds every day, his practice lying chiefly among the poor. At one time, it is stated, he was in practice in India. He has taken alcoholic beverages and smoked tocacco since his youth, though he has been moderate in the use of both. His father, it is added, died at the age of one-hundred-and-eight. In connection with this subject of "grand old men" of medicine, we take the opportunity of congratulating Mr. William Salmon, J.P., D.L., of Penlayne Court, near Cowbridge, Glamorganshire, who recently celebrated his one-hundred-and-fifth birthday. Mr. Salmon was born at Wickham Market, in 1790, and became a member of the Royal College of Surgeons in 1809, the year Mr. Gladstone was born. It is comforting to the members of a profession in which the average of life is somewhat low to be able to point to two such centenarians as Mr. Salmon and Dr. Boisy.—*British Medical Journal.*

REVIEWS.

TWENTIETH CENTURY PRACTICE: AN INTERNATIONAL ENCYCLOPEDIA OF MODERN MEDICAL SCIENCE. BY LEADING AUTHORITIES OF EUROPE AND AMERICA. Edited by THOMAS L. STEDMAN, M.D., New York City. In twenty volumes. Volume I: Diseases of the Uropoietic System. 8vo., pp. 737. New York: William Wood & Co., 1895.

WE are at a loss to understand the title of this work. Should it be issued at the rate of one volume per year, one-fourth of it will have appeared before the beginning of the twentieth century, and if at the rate of four volumes a year, it will be completed by the time the century opens. We doubt whether the medicine or surgery of 1895 could have been set forth in 1894. We are sure that a "Nineteenth Century Practice" could not have been adequately written in 1795. Within the last two decades there have been important changes in the fundamental theories, as well as in the actual practice, of our profession. The incessant and increasing activity of the vast army of investigators, with ever-improving methods, must forbid the idea that the science of to-day will be accepted by the men of the twentieth century as sufficient for them.

This first volume is devoted, as stated on the title-page, to the uropoietic system; this term including, not very accurately, all the urinary organs. One article by Dr. Delafield, of New York, deals with the diseases of the kidneys; one by Mr. Reginald Harrison, of London, with the surgical disorders of these glands and the ureters; another by the same author, with diseases of the bladder. Dr. Lydston, of Chicago, contributes one on the diseases of the prostate and another on those of the male bladder. Then follows an essay by Mr. Hurry Fenwick, of London, which is somewhat oddly entitled "Diseases of the Urine." Is the urine a part of "the *uropoietic* system"? We can hardly regard the urine as liable to disease, any more than the bile, the saliva, or the sweat would be. Finally, there is a section on the diseases of the female bladder and urethra, by Dr. Kelly, of Baltimore, by all odds the best article of the volume.

It will be perceived that the contents of this volume are largely surgical, and we need only say that the work of the authors is such as would be expected from men of their high standing. They have given a very fair exposition of the state of science in this latter end of the nineteenth century.

The more distinctly medical articles of the volume are that of Delafield on "Diseases of the Kidneys," and that of E. Hurry Fenwick on "Diseases of the Urine."

Dr. Delafield's article deals with the group of diseases commonly spoken of as "Bright's disease." The classification and the discussion follow the lines laid down in this author's numerous previous publications, and, therefore, scarcely require further notice here. It has always, however, seemed difficult to us to establish as independent forms many subdivisions of renal disease which Delafield classifies. From a pathologic standpoint of course this may be justified, and even here mixed cases are the rule, but from a clinical point of view it seems impracticable and valueless.

Dr. Fenwick's articles, particularly those on hematuria and pyuria, are comprehensive and most interesting. Not the least valuable feature about them is their essentially practical nature and their clearness. The article on oxaluria might have been extended considerably, and the remote effects on the condition of the kidneys should have received some attention.

The treatment of the diseases of the bladder and urethra has very appropriately been placed in the hands of Dr. Howard A. Kelly, who has done more than any other man in the profession to further our knowledge of these organs and their functions, and of their proper management under diseased conditions. The subject-matter has been disposed of in a logical sequence, and the most recent methods of cystoscopy and urethroscopy explained by numerous illustrations as well as by means of a lucid description. While necessarily limited in its scope, it may truthfully be said that the pathology of the female urinary organs, as portrayed in this volume, shows a most noteworthy progress within the last few years.

TRANSACTIONS OF THE AMERICAN ORTHOPEDIC ASSOCIATION. Eighth Session, held at Washington, D.C., May 29, 30, and 31, 1894. Vol. VII. 8vo., pp. 358. Published by the Association. Philadelphia: W. J. Dornan, 1895.

THIS volume is a very creditable specimen of its class. It contains a large amount of valuable matter, which may be studied with interest and profit by the general surgeon as well as by the specialist in orthopedy.

In a series of six articles on the treatment of club-foot the modern methods, by open section and by tarsoclasis, are set forth and discussed. Three papers are devoted to that of congenital dislocations of the hip, so recently brought within the range of surgical relief; these papers, by Bradford, of Boston, Lorenz, of Vienna, and T. Halsted Myers, of New York, elicited a discussion showing the variety of opinion still prevailing in regard to this subject. There are four articles on rachitis and the deformities resulting from it, and a like number on points connected with the treatment of hip-disease. One of these latter essays, by Gibney, of New York, is of special merit.

Some valuable and interesting observations are presented in a paper by Whitman, of New York, on the bending of the neck of the femur sometimes met with in adolescents. Another important essay is that by Townsend, of New York, on tuberculous disease of the shoulder-joint; the author advocates operative treatment, by exposure and removal of the diseased bone, by curetting or excision, as the case may be.

Many of the other papers possess interest, but those now mentioned are of chief value. We note with pleasure the share taken by foreign members of the Association in its work, seven of them having contributed to the present volume.

We feel constrained to take exception to the address of the President, which is below the average of such productions. Its style is slovenly and vague, the pathologic statements contained in it are doubtful, and the author's views as to the status and claims of specialties are open to question. We commend to him the reading of a very sound and sensible report on this subject, presented to the American Medical Association in 1866, and to be found in the seventeenth volume of the *Transactions* of that body.

MANUAL OF GENERAL MEDICAL TECHNOLOGY; INCLUDING PRESCRIPTION-WRITING. By EDWARD CURTIS, A.M., M.D., Emeritus Professor of Materia Medica and Therapeutics, College of Physicians and Surgeons, Medical Department of Columbia College, in the City of New York. Third edition. Conformed to the U. S. Pharmacopeia of 1890. Small 8vo., pp. x, 235. New York: Wm. Wood & Co., 1895.

EVERY graduate in medicine—in fact, all senior students at college—should be familiar with the contents of this useful and cleverly written little book, which deals with matters that concern the physician, the applied therapeutist, quite as profoundly as do matters of technique affect the surgeon. The attempt is not made to teach materia medica or therapeutics, such knowledge being rightly presupposed, but in a pleasantly colloquial manner the method and art of prescribing are succinctly laid down. The subject is considered in two parts—(1) the technology of medicines and (2) the technology of medicating. The first includes matters relating to the authority for medicines, the naming, the determination of the quantities, and the prescribing of medicines; and the second, modes of medicating and questions of dosage. An appendix contains a table showing the solubility of chemicals in water and in alcohol. Of course, the best teacher of the art of writing prescriptions is practical experience; but this little book will prove a useful guide and help.

Transactions of the American Dermatological Association. Eighteenth Annual Meeting, May, 1894. Reported by the Secretary, C. W. Allen. Pp. 143. New York, 1894.

The work contained in this volume indicates plainly that this Association is active and vigorous. Its membership is composed of the leading dermatologists of the country, all of whom are well known to the profession for the valuable essays they have contributed to the literature of this subject. In the volume before us are abstracts of a number of excellent articles, together with a report of the discussions. Many photographs, colored illustrations, and wood-cuts are noted, the introduction of such matter into the *Transactions* of this Association being a novel and interesting feature. One of the most valuable contributions emanates from the Statistical Committee, of which Dr. J. N. Hyde is the efficient Chairman, from which it appears that 204,866 cases of cutaneous disease have been observed and collected by the members of the Association. These cases have been arranged and tabulated by the committee, so that a clear idea of the dermatology of the United States may readily be obtained from these tables and figures. The volume, as a whole, is the most satisfactory that this Association has put forth, although in some places, as on page 141, there occur conspicuous typographic errors which should have been corrected.

Transactions of the American Surgical Association. Vol. XII. Edited by De Forest Willard, M.D. Philadelphia: Wm. J. Dornan.

This volume is judiciously edited and contains numerous articles of interest and importance. Ashhurst discusses the surgical treatment of empyema, and maintains that operation is unjustifiable unless the presence of pus is certain; that the first operation should be simply antiseptic aspiration; and that if the fluid reaccumulates incision and drainage should be practised.

Keen presents an admirable paper upon amputation of the entire upper extremity, and of the arm at the shoulder-joint, and considers the value of each known method for the prevention of hemorrhage.

Allis discusses the control of hemorrhage in shoulder-joint amputation; Billings, the methods of teaching surgery; Chiene, the teaching of surgery; Tiffany, the surgery of the kidney; Weir, surgical kidney; Fenger, the surgery of the ureter; Coley, the treatment of inoperable malignant tumors with the toxins of erysipelas and of the bacillus prodigiosus; Willard, the possible antagonism between erysipelas-cocci and tubercle; Forbes, stone in the bladder. The other contributors to this excellent volume are J. W. Elliot, J. McF. Gaston, Carmalt, Ransohoff, Pilcher, Charles B. Porter, Deaver, and Richardson.

CORRESPONDENCE.

ANOTHER DOUBT ABOUT THE NINETEENTH CENTURY.

To the Editor of The Medical News,

Sir: Dr. Slee's recent article, "Is this the Nineteenth Century?" suggests a word. Perhaps this is not the nineteenth century. Dr. Slee's article shows what ignorance may be found in many communities proud of their high schools and academies, which would seem to indicate more than average intellectual attainment of the inhabitants. Our little city of about eight-thousand boasts of a common-school system from the first grades of A B C to and through a most excellent high-school course. In addition we have here a sectarian school with the proud name of "The University of Urbana." Then, too, we have a public library, which is very creditable, and our lecture-courses, literary societies, and many other features indicating a thinking, educated people. Also we have churches, all of them well filled now, as the result of a recent revival. We had with us some weeks ago a wonderful evangelist and his sympathetic singer.

On a recent Sunday evening at the largest church in our town was held a "union service," to advertise and praise Keeleyism. The service of God was set aside to further the ends of private corporations founded for gain. Salvation is free—but is Keeleyism? Prayers were offered and the blessings of Heaven called down upon one of the most audacious examples of charlatanism in the history of medicine. A "Keeley lecturer" from the pulpit boasted of the power of the Keeley treatment to cure inebriety. He gave his experience in an institute; told how they put the gold-cure in his arm, and how he emerged cured of all desire. The gold-cure, he, said, was the result of the prayers of millions; it was God's answer to those petitions—in fact, the direct gift of the Almighty. The preachers joined in an amen. What has been God's gift to Keeley? Does anyone know how many thousand dollars? The multitude of cures was the boast of the lecturer, and the people urged to use their moral influence and persuasion to induce drunkards to go to Keeley institutes. "Rates upon application," I suppose. The Keeley failures were the result of Satan's interference, and a good preacher at the close of the talk prayed the Lord to wipe out of existence all the Keeley graduates who had the audacity to relapse.

Keeleyism has resorted to the pulpit, and now what is to hinder the use of God's temples and time of worship to extol the virtues of other cures for alcoholism—as well the all-curing powers of Pain's Sellery Compound or Be-Warned of Safe Cures? We need "a cure" to exert some influence over a certain proportion of our clergy and infuse some wisdom into their piety. But—perhaps this is *not* the nineteenth century.

Respectfully, E. W. Ludlow.

Urbana, Ohio.

A DRESSING FOR FRACTURES OF THE LOWER EXTREMITY.

To the Editor of The Medical News,

Sir: For several years I have been using a method of dressing fractures about the leg and thigh which has given me great satisfaction, and which would seem well adapted to a large proportion of cases. The splints employed are of suitable length, according to the location of the fracture and the size of the limb, and consist simply of straight pieces of light board freely upholstered on one side with curled hair. This material is very elastic and porous, not matting together into a hardened mass. It is cool and comfortable, not causing the limb to sweat. A splint thus padded is applied to the outside of the limb, and instead of using a roller bandage, a single piece of cloth large enough to envelop both limb and splint is drawn smoothly underneath the limb. The outer edge of this cloth is caught fast to the splint by means of a row of safety-pins, and then the inner edge is drawn smoothly and firmly upward and outward about the limb, and is attached to the splint in like manner by a row of safety-pins. Thus the limb is held smoothly and firmly against the elastic pad of curled hair, and by altering a pin here and there it is possible to adjust the pressure just where it is needed. With such a smooth surface in contact with the limb without the creases, folds, or turns of the roller bandage, and with the elastic pad, it is possible to hold the parts much more firmly than in any other way and without discomfort to the patient. By making extension over a properly adjusted pulley at the foot of the bed and a splint and bandage of this kind, it is possible to reduce fractures very perfectly without pain, the limb requiring scarcely any handling in the process of adjustment. When the broken fragments have been brought into perfect adjustment, and the splint and bandage are properly applied, less extension is required, perhaps, than by any other method, in order to preserve perfection of adjustment. I have seen a broken femur, in which the fracture was high up and oblique, held very perfectly by a splint of this kind extending from the axilla to the ankle, one bandage of the sort described passing around the body of the patient, and another around the limb, although it became necessary to move the patient daily in order to dress large bedsores which had formed under previous treatment. Even under such unfavorable circumstances union took place with very little shortening and without noticeable deformity. The use of curled hair as a padding, and a single thickness of cloth fastened in the manner described as a bandage, certainly has many advantages, not the least of which is that it makes the patient very comfortable.

Yours truly,
M. A. Veeder.

Lyons, N. Y.

STRIKING EFFECTS OF BEE-STING.

To the Editor of The Medical News,

Sir: I was called on the evening of March 27th to attend a man suffering from a bee-sting. He is sixty years old, in splendid health, stoical in regard to pain, and of good self-control. He is a farmer, and after some hard work, at which he had become quite heated, he undertook to remove a hive of bees from their winter quarters in the cellar to his garden. In doing so he was stung by one bee in the palm of the hand. He allowed the sting to remain in the wound, and went on about his work after setting down the hive. In about fifteen minutes he began to sweat profusely and became very dizzy. It was all that he could do to reach the house on account of vertigo. He then had the sting removed, but he began now to feel great mental depression and became so confused that he could hardly make known his wishes. A messenger was at once dispatched for medical aid.

I found the man in great misery, retching and straining constantly, and complaining of great constriction in the region of the diaphragm, and feeling as if his skin was on fire. His temperature was 102°, the respirations 30, very labored, and the pulse 96. The conjunctivæ were intensely congested, and the skin all over the body was covered with an urticarial rash. I believe that there was no place on his skin the size of a dollar free from this eruption. The place where he had been stung was not swollen much, and he was stung in only one place.

Previous to this experience he had been stung many times, and when about the face it was usually attended with some local pain and swelling, but with no constitutional symptoms. The relief may have been in spite of the treatment or because his mind was relieved of anxiety. I made up a dozen powders, each containing five grains of acetanilid, two of camphor monobromid, and three of caffein, pure. These were given every hour, for several doses, and then every two hours. I also gave him twenty-five minims of aromatic spirit of ammonia every half-hour. In two hours' time he was considerably relieved, and the next day felt nearly well. The skin-eruption remained until the succeeding day. The man has been all his life particularly free from skin-eruptions.

The bees after hibernating throw off a black excrement profusely. Are they at that time more dangerous than at other times?

Respectfully yours,
David B. Penniman.

Argyle, Ill.

THE UPPER LIMIT FOR SYMPHYSIOTOMY.

To the Editor of The Medical News,

Sir: In The Medical News of March 2, 1895, Dr. Henry J. Garrigues made a personal protest against a statement of mine in an article on symphysiotomy, in which I said that Dr. Garrigues places the upper limit for this operation at an 11 cm. conjugata vera in a generally contracted pelvis, and that, furthermore, one diameter being perfectly normal, such a pelvis could not be called a generally contracted pelvis. Dr. Garrigues denies this, and truthfully so; he did not say 11 cm., but he said 4 inches. As I am in the habit, in writing scientific articles, of using the standard system of the French, I had to convert these inches into centimeters, and, on consulting Schroeder's work on *Obstetrics*, found 11 cm. to equal 4 inches. This statement is just as true as that of Dr. Garrigues, that 4 inches equal 10 cm. The inches to which Schroeder refers are the Rhenish inches, while Dr. Garrigues undoubtedly had in mind the American inch, which appears to be smaller than the Rhenish by about 45 mm. It is to be supposed that those who live and write in this country will naturally use that system of measurement which is in general use here, and I am certainly open to criticism for having overlooked this fact at the time I wrote my article. I regret this oversight so much the more, as Dr. Garrigues seems to feel unnecessarily provoked by my statement, which was made not with a view to criticise or belittle the teachings of such a master in gynecology as he is, but simply because the proportion was unintelligible to me, and I wished to have some light on the subject.

His position in placing the upper limit is now quite clear to me, and I thank him for taking the trouble of making it. Furthermore, the reason he gives for extending this limit in a generally contracted pelvis to 10 cm. seems to me a very good one, although quite a number of leading obstetricians are decidedly opposed to a too liberal extension of the scope of the operation. It is a great pity that the metric system is not generally adopted by scientific writers in this country, as it is on the Continent of Europe; if it were, such deplorable misunderstandings as this could not readily happen; but as long as our leading men persist in using an obsolescent system, the case seems to be almost hopeless.

Very respectfully,
W. Winterberg.

San Francisco, Cal.

A METHOD OF APPLYING TINCTURE OF IODIN.

To the Editor of The Medical News,

Sir: I have found the following method of employing iodin topically of service: Take a piece of gutta-percha tissue and give it three or more coatings of tincture of iodin; let it dry, and apply the tissue in the selected locality, with the iodin coating turned toward the skin, and secure it with a roller bandage. In this way the good results of the topical application of iodin may be secured without smarting, a matter of importance in the case of children and weak persons. The application may be repeated daily. M. Iversen.

Stoughton, Wis.

COLD IN THE TREATMENT OF PNEUMONIA.

To the Editor of The Medical News,

Sir: My last paper on "Ice-cold Applications in Acute Pneumonia" contained a record of seventy-four cases so treated with only two deaths. Being desirous of making a full collective report on this subject, I take the liberty of asking those who have tested this measure to furnish me kindly the result of their experience with it. Full credit will be given to each correspondent in the report that I hope to publish.

Respectfully,
Thomas J. Mays.

1829 Spruce St., Philadelphia.

NEWS ITEMS.

The Association of Military Surgeons of the United States will hold its fifth annual meeting at Buffalo, N. Y., May 21, 22, and 23, 1895. An address of welcome to the city of Buffalo will be delivered by Mayor Edgar B. Jewett; an address of welcome to the State by Governor Levi P. Morton; an address on behalf of the medical profession by Dr. Roswell Park; an address by the President of the Association, Dr. George M. Sternberg.

The following papers have already been promised for this meeting, and others are expected: "Report on the Status of the National Guard," by Dr. Nelson H. Henry. "Experiments Illustrating the Degree of 'Powder-Burn' as Modified by the Distance of the Object, Size, and Conformation of the Bore, Amount and Standard of the Powder, and other Practical Demonstrable Causes," by Dr. Louis A. La Garde. "The Location and Removal of Missiles from the Cranial Cavity," by Dr. George R. Fowler. "Discussion on the Report of the Committee on 'Litter,'" by Drs. John Van R. Hoff and E. T. T. Marsh. "Ambulance-Construction," by Drs. Dallas Bache and Charles R. Greenleaf. "Conservative Surgery on the Battlefield," by Dr. Nicholas Senn. "The Relation of Concentrated Food to Active Service Demands," by Dr. Charles Smart. "The Location of Sites for and the Construction of Military Posts in Relation to Proper Sanitation," by Dr. Dallas Bache. "The Relation of Naval Architecture to Proper Sanitation," by Dr. J. R. Tryon. "On the Value of Bromin in Military Surgery," by Dr. M. O. Terry. "The Handling and Care of Wounded on Shipboard," by Drs. A. C. H. Russell, E. R. Stitt, and A. M. D. McCormick. "The Post Exchange from a Medical Standpoint," by Dr. Philip F. Harvey. "Infected Bullets," by Dr. Louis A. La Garde. "Fifty-two Amputations of the Thigh," by Dr. John D. McGill. "Instruction of the Hospital Corps," by Dr. H. S. Turrill. "Upon the Surgeons-General of the Militia," by Dr. George Cook. "Field Hospital Service," by Dr. Dallas Bache. "Some Experimental Work with the New Ball," by Dr. J. D. Griffith. "Gunshot Wounds of the Kidneys," by Dr. A. L. Wright. "On the Travois Litter," by Dr. Wladimir F. De Niedman. "Details Regarding the Medical Service of the National Guard of the State of New York during the Buffalo Strikes of 1893," by Dr. Lewis Balch. "Details Regarding the Medical Service of the National Guard of the State of New York during the Recent Brooklyn Strikes," by Dr. William E. Spencer. "Details Regarding the Medical Service of the National Guard of the State of Illinois during the Recent Chicago Strike," by Dr. Charles Adams. "Method of Caring for Wounded on the Field and in Hospitals of Chinese and Japanese Armies," by Dr. C. U. Gravatt. "A Consideration of Scorbutic Manifestations in Young Subjects," by Dr. John C. Wise. "Asepsis in Military Service," by Dr. Eduard Boeckmann. "A Medical Officer in the Volunteer Army," by Dr. F. W. Byers. "The Merriam Pack," by Dr. Lewis Balch. "Measures for the Prevention and Suppression of Dangerous Contagious Diseases in Garrison and in the Field," by Dr. H. Lincoln Chase. "The Effects and Treatment of Heat and Sunstroke at Camps of Instruction," by Dr. Orlando J. Brown. "The Mental Evolution of the Citizen-soldier," by Dr. Charles W. Galloupe, "Report on Diagnosis Tag for Field Use," by Dr. William H. Forwood.

The Ohio State Pediatric Society will hold its first annual meeting on May 15th, in parlors of the Neil House, on High Street, opposite the State House, Columbus. The program will include an address by Dr. J. L. McCurdy, of Dennison; an address by Prof. A. Jacobi, of New York; a paper on "Masturbation," by Dr. J. Park West, of Bellaire; a paper on "The Care of the Ear in Acute Infectious Diseases of Childhood," by Dr. T. V. Fitzpatrick, of Cincinnati; a paper on "Calcareous Degeneration of the Smegma Præputium," by Dr. R. Harvey Reed, of Columbus; an address by Dr. George M. Clouse, of Columbus.

The American Academy of Medicine will hold its twentieth annual meeting in Levering Hall, Johns Hopkins University, Baltimore, on May 4 and 6, 1895. Physicians and others who may be interested in the topics treated by the papers are cordially invited to attend. The following is the scientific program arranged: "Contract Medical Work and Fees," by Dr. C. P. Knapp, Wyoming, Pa.; "The Economics of Prostitution," by Dr. Woods Hutchinson, Des Moines, Ia.; "A Perfect Consultation," by Dr. L. Duncan Bulkley, New York; "The Limits of a Physician's Duty to the Dependent Classes," by Dr. James W. Walk, Philadelphia; "Criminal Anthropology," by Dr. E. V. Stoddard, Rochester, N. Y.; "Hospital Management," by Dr. W. L. Estes, South Bethlehem, Pa.; "The Emergency Hospital; with a Plea for Municipal Government," by Dr. Walter L. Pyle, Washington, D. C.; "How to Reform the Dispensary Abuse," by Dr. Emma B. Culbertson, Boston; "Hospitalism," by Dr. George M. Gould, Philadelphia; "The Economic Aspect of American Charities," by Dr. Bayard Holmes, Chicago; "Drifting: Who—How—Whither?" by Dr. Leartus Connor, Detroit; "Rudimentary Preparation, Compared with Higher Education for Specialties, in Medicine and Surgery," the President's Address, by Dr. J. McFadden Gaston, Atlanta; "Is the Recitation-method of Teaching a Success in Medical Colleges?" by Dr. Edwin F. Wilson, Columbus, O.; "Clinical Instruction as Conducted in the University Hospital, Ann Arbor, Michigan," by Dr. W. J. Herdman, Ann Arbor; "Further Observations upon the Effects of Medical Legislation in the United States," by Dr. Perry H. Millard, St. Paul; "The Proper Teaching of Physiology in the Public Schools as a Means of Preventing Intemperance and Venereal Disease," by Dr. De Lancey Rochester, Buffalo; "Expert Testimony," by Dr. Henry Leffmann, Philadelphia; "The Problem of Dependency as Influenced by the Chinese in America," by Dr. W. F. Southard, San Francisco; "What Shall We Do with our Alcoholic Inebriate?" by Dr. J. W. Grosvernor, Buffalo; "Life-Insurance in its Relation to one of the Dependent Classes," by Dr. E. O. Bardwell, Emporia, Pa., "What Agencies Conspire to Check Development in the Minds of Children," by Dr. J. Madison Taylor, Philadelphia; Some Limitations to Curative Work in State Hospitals for the Insane," by Dr. Charles B. Mayberry, Danville, Pa.; "The Increase of Insanity," by Dr. Gershom H. Hill, Independence, Iowa; "The Need of More Medical Reference Libraries, and the Way in which they can be Established," by Dr. Reuben Peterson, Grand Rapids, Mich.

Methodist Episcopal Hospital of Philadelphia.—A competitive examination for three resident physicians will be held at the Methodist Episcopal Hospital, South Broad Street below Wolf, Philadelphia, on Thursday, May 2d, at 7.30 P.M. The respective terms of service will begin July 1st for twelve months, August 1st for thirteen months, and September 1st for fourteen months. Competition is open to both sexes, but the candidates are required to have the degree of A.B. from some reputable college or university, and must obligate themselves to accept the position if appointed. Further information can be obtained from the Chairman of the Examining Committee, Dr. J. Hendrie Lloyd, 3910 Walnut Street.

The Medical Society of the State of Pennsylvania will hold its forty-fifth annual meeting at Chambersburg, on May 21, 22, 23, and 24, 1895. The Address on the Practice of Medicine will be delivered by Dr. I. C. Gable, of York; the Address on Surgery, by Dr. C. L. Stevens, of Athens; the Address on Obstetrics, by Dr. W. B. Ulrich, of Chester; the Address on Mental Disorders, by Dr. F. X. Dercum, of Philadelphia; the Address on Otology, by Dr. L. H. Taylor, of Wilkesbarre; the Address on Hygiene, by Dr. Hildegarde N. Longsdorf, of Dickinson.

Death of an Advanced Centenarian.—The Indian *Medical Record* is responsible for the statement that Lieutenant Nicolas Lavin, of the Grande Armée, died some time ago at the age of one-hundred-and-twenty-five years, leaving a daughter of seventy-eight years. He was born in Paris in 1768, served as a hussar through a number of campaigns, and was taken prisoner in 1812 during Napoleon's retreat from Moscow. On his liberation he married and settled down at Saratoff.

Dr. Winfield Scott Hall has been elected Davis Professor of Physiology in the Northwestern University Medical School of Chicago, from which institution he was graduated in 1891. He has been a resident physician in Cook County Hospital and professor of physiology in Haverford College, Pa. He has been abroad for nearly three years, and will return in the autumn to assume the duties of his new position.

The Buffalo Medical and Surgical Journal will signalize its approaching semi-centennial anniversary by increasing its reading-pages from 64 to 80, and by making other improvements that will contribute to its efficiency and keep it abreast of the professional progress of the period. The *Journal* belongs in the class of medical publications that reflect honor and credit on the profession.

Class-reunion.—It is proposed to have a reunion of the Class of 1874 of Jefferson Medical College, on the evening of May 10th, in Philadelphia. Members of the Class who have not received an announcement will please forward their names to Dr. E. E. Montgomery, 1715 Walnut Street, Philadelphia.

Books and Pamphlets Received.

Catalogue, Law School, Mercer University, Macon, Georgia, 1893-1894.

Difficult Labor. A Guide to its Management, for Students and Practitioners. By G. Ernest Herman, M.B. Lond., F.R.C.P. New York: William Wood & Co., 1894.

Traumatic Paralysis of the Abducens Nerve. By Dr. O. Purtscher. Translated by Harry Friedenwald, M.D. Reprinted from the Archives of Ophthalmology, 1894.

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ORIGINAL ARTICLES.

SOME OBSERVATIONS ON THE RELATIONSHIP OF PELVIC DISEASES TO PSYCHIC DISTURBANCES IN WOMEN.

BY P. T. VAUGHAN, M.D.,
OF TUSCALOOSA, ALA.;
ASSISTANT PHYSICIAN, ALABAMA INSANE HOSPITAL.

DURING the past few years there has been a tendency shown by some of the medical men connected with several of the institutions devoted to the care of the insane in the various States to utilize some of the abundance of material they have under their charge in studying the effects produced by different diseases upon the mental faculties. There is a very general impression, one not confined to the laity, but that finds expression in the writings of a good many medical men, to the effect that pelvic disease in women is a prolific factor in causing insanity in this class of people. The study of the relationship between pelvic disease and insanity in women has always been extremely interesting, and during the past few years particularly it has attracted a great deal of attention from various alienists and gynecologists.

A large number of the applications made for admission to the female wards of the Alabama Insane Hospital contain the assertion that the applicant is insane because of some pelvic disease, or because of some derangement of the menstrual function. Now, for some time past it has been the practice to examine carefully every female patient admitted who complained of any menstrual irregularity, pelvic discomfort, or disease. These examinations are always made in a most careful, painstaking manner. In some instances, in which there is doubt as to the accuracy of the diagnosis, repeated examinations are made at different times before a definite diagnosis is made. In this way, utilizing the great wealth of material we have, some very interesting facts have, to our minds, been conclusively proved. The most important of these facts is embodied in the statement that pelvic disease in women is not the great etiologic factor in the causation of insanity among women that it is commonly held to be. During the past two years there have been three-hundred patients admitted to the female wards of the hospital, and out of this number one-hundred-and-fifty have been carefully examined. The remaining one-hundred-and-fifty gave no evidences upon admission, or subsequently, of any variety of pelvic disease. Their menstrual functions were perfectly normal, they complained of no pelvic pain, and consequently were not subjected to a vaginal examination. Of the hundred-and-fifty cases examined, very few, indeed, if any, would justify us in saying that the pelvic lesions found present were in themselves a sufficient cause to produce insanity.

From the following observations it will be noticed that while half of the cases admitted to the hospital complained of some pelvic disease, upon examination it was found that in reality only fifteen out of one-hundred-and-fifty, or 10 per cent. of those females examined, had conditions present in their pelves which could be said to be pathologic, or which gave rise to inconvenience or pain. The patients in whom diseased conditions were present had the following diagnoses made concerning them: One of lacerated perineum with complete prolapse of the uterus; one of retroversion of the uterus with adhesions, and a small uterine fibroid; one case of fibroid polypus of the uterus; two of chronic areolar hyperplasia of the uterus, attended with endometritis; one of prolapsed ovary, adherent and very tender; one of uterine fibroid, attended with endometritis and dysmenorrhea; two of endometritis fungosa; three of dysmenorrhea, and three of salpingitis. These fifteen cases constitute the number in whom true pelvic disease was present. In several instances other than those recorded there were various minor flexions and versions of the uterus. Also in several instances minor lacerations of the cervix and of the perineum were found. These last few cases were in no way inconvenienced in their habits by these conditions, and did not complain of any pain, or of any irregularity in their menstrual functions in consequence of them.

Now, in analyzing the fifteen cases in which pelvic disease was present, it was found that in nearly every instance some other bodily disease was also present, and was a much more probable causative factor in producing the insanity than was the pelvic disease.

The first case—that of lacerated perineum and complete prolapse of the uterus—was an inmate of the hospital, and had very severe hysteric attacks before she acquired a prolapsed uterus. Physical examination in this case revealed the fact that the diastolic heart-sound at the apex was roughened, and that the systolic sound at the apex was accompanied by a distinct harsh murmur. The woman was a congenital imbecile, and inquiry into her family history showed that her grandmother was insane.

In the second case—that of retroversion of the uterus with adhesions, and a small uterine fibroid—physical examination showed a systolic heart-murmur at the apex and a diastolic heart-murmur at the base; there was, also, a kidney-lesion. Nothing of the family history in this case could be learned.

In the third case—that of fibroid polypus of the uterus—no physical abnormality could be found on examination, but the stigmata of degeneracy were very marked. Inquiry into the family history revealed the fact that her grandmother was insane.

Concerning the fourth and fifth cases—those of chronic areolar hyperplasia of the uterus, attended with endometritis—physical examination revealed that in the first there was present a decided roughness of the systolic heart-sound at the apex, sufficiently distinct to be considered a murmur. This patient had an aunt who was insane. In the second one of these cases no physical abnormality could be found upon examination, but inquiry into her family history showed that she had a first cousin who was insane.

In the sixth case—that of prolapsed ovary adherent and very tender—physical examination revealed the presence of arterial sclerosis and also of a chronic nephritis. Nothing could be learned concerning the family history of this patient.

In the seventh case—that of small uterine fibroid, with endometritis and dysmenorrhea—physical examination showed a systolic heart-murmur at the apex. In this case also nothing could be learned concerning the family history.

In the eighth and ninth cases—those of endometritis fungosa—the eighth showed upon physical examination a diastolic heart-murmur at the apex and also the presence of a small goiter. The patient had a sister who was insane. The ninth case was a patient in whom a bad chronic nephritis was present. She was a foreigner, and nothing could be learned of her family history.

In the tenth, eleventh, and twelfth cases—those in which dysmenorrhea was present—the first showed upon physical examination a systolic heart-murmur at the apex. There was some question as to whether this murmur was of anemic origin or not, the patient being very thin and exsanguinated. If the heart-murmur be not considered organic, and hence be eliminated as a causative factor, then the patient has a bad kidney-lesion, which will have to be considered as such. Inquiry into the family history of this patient revealed that she had two uncles and one cousin who were insane. This was a case of morphinomania. The second of these cases showed upon physical examination a systolic heart-murmur at the apex. This, too, was a case of morphinomania. She had an aunt who was insane. The third showed upon examination the heart-action to be violent and irregular. A faint systolic apical murmur, with accentuation of both aortic and pulmonary tones, particularly of the pulmonary, was present. Dyspnea and cardiac palpitation were both present. In addition to the heart-disease there was also a bad kidney-lesion present; the patient at different times gave very marked evidences of uremic poisoning. This also was a case of morphinomania. She had a cousin who was insane.

In the thirteenth, fourteenth, and fifteenth cases—those in whom salpingitis was present—the first showed upon examination the presence of pulmonary tuberculosis, syphilis, chronic nephritis, and also a loud systolic heart-murmur at the apex. The second showed a bad kidney-lesion, and the third showed the presence of pulmonary tuberculosis. Nothing could be learned of the family or personal history of any of these three cases, except that they had all led immoral lives.

From the foregoing facts it will be seen that out of the fifteen cases, in eight—*i. e.*, in each case in which it was possible to learn anything of the family history—insanity was present in the family. As regards the organic disease present, eight of the cases had heart-disease, four chronic nephritis, one chronic pulmonary tuberculosis, and in two instances no bodily disease was discoverable. The two cases in which no bodily disease was discovered had very bad family histories. In looking over these cases one very peculiar fact is the great proportion of women having heart-disease. Taking the women as they are admitted to the hospital, about twelve per cent. of the total female admissions have heart-disease. Fifty-three-and-one-third per cent. of the fifteen women in whom pelvic disease was found had heart-disease.

The treatment in these fifteen patients was directed principally toward bettering the bodily condition. In several, in which it was suitable, electric treatment for the uterine complaint was combined with the general tonic treatment. It is our opinion that in the great majority of cases of insanity of alleged ovarian or uterine causation surgical treatment is a useless procedure.

Several years ago celiotomy for the removal of the ovaries in two selected cases of insanity of alleged ovarian origin was performed on two patients in this hospital. In neither of these was any mental improvement apparent.

Examination of the remaining ninety per cent. of the women who complained of pelvic disease showed only a slight leukorrheal discharge, accompanied by no other evidences of pelvic disease. This leukorrheal discharge is a condition found in all female subjects of general malnutrition among the sane as well as among the insane, and can in no sense be regarded as a causative factor in producing insanity. It is only a local manifestation of a generally lowered systemic condition. The patients in whom leukorrhea is the main distinguishing feature are usually thin and emaciated in appearance, and are unable to perform even the mildest physical exercise without complaining of being severely fatigued. They have little appetite, and as a rule are very capricious in their tastes. Generally they complain at various times of neuralgias in the ovarian regions, of backaches, and of headaches. With this train of symptoms, disorders of the gastro-intestinal tract are usually associated. In a great majority of these cases the claim is made positively that the insanity is caused by the uterine derangement. It is our opinion that these patients are not insane because of the pelvic condition present, but in a few instances are manifestly suffering from insanity induced by mental worry, and in a great many instances from insanity induced by deranged conditions of internal organs other than the generative organs. They do not need treatment for their uterine complaint, except for the general beneficial moral effect that local treatment always has in these cases. Consequently, when a patient suffering with insanity of alleged uterine, ovarian, or menstrual causation is admitted to the female wards of the hospital, one in whom a leukorrheal discharge, without other evidences upon examination of real pelvic disease, is present, the following line of treatment with almost uniformly good results is pursued. Commencing on the day of admission, the patient is studied closely. Thorough examinations are made, not only of the pelvic contents, but general physical examinations are made. The heart, the lungs, the urine, the state of the gastro-intestinal tract, the excretions, the amount of sleep the patient obtains, the general nervous condition—all of these subjects are carefully studied, and accurate notes are made concerning each of them. With a thorough understanding of the condition of each of the different organs in hand, a rational system of treatment is commenced.

If any diseased condition is found in a particular organ, the treatment is directed principally toward the curing, or the amelioration, of that condition. A great deal can be done with the proper therapeutic agents toward correcting the bad effects produced on the nervous system by a diseased heart, a bad kidney, or a tuberculous lung. The excretions are brought into a healthy, normal state; the gastro-intestinal derangements are corrected; the amount of sleep is regulated; the woman is put upon simple, but good, wholesome, nutritious food, and in the course of several weeks after her admission moderate physical exercise is urged and insisted upon. In the meantime the only direct treatment the patient has for the uterine complaint is some mild astringent vaginal douche, which is usually given at night just before bedtime. A great many of these cases recover, and are returned to their homes.

That pelvic disease is not a greater factor in causing insanity is also shown by the autopsy-records of this hospital. Records of the last eighty-nine autopsies of females show that the generative organs were perfectly normal in forty-three instances. In twenty-seven instances the pathologic conditions found were so trivial in character that they could hardly be called pathologic—the lesions found varying from a fibroid a quarter of an inch in diameter to a very slight laceration of the cervix. In nineteen instances, however, diseased conditions were present; and the following table shows the abnormal states found post mortem, along with the bodily disease the patient had upon her admission to the hospital:

PELVIC DISEASE.	BODILY DISEASE ON ADMISSION.
Case I. Cyst of ovary size of hen's egg, containing clear fluid.	Chronic pulmonary tuberculosis.
Case II. Salpingitis.	Chronic pulmonary tuberculosis.
Case III. Multilocular cyst of left ovary.	Chronic pulmonary tuberculosis.
Case IV. Cyst of left ovary two inches in diameter.	Chronic nephritis.
Case V. Right ovary adherent to side of uterus.	Chronic pulmonary tuberculosis.
Case VI. Various adhesions about uterus and ovaries.	Chronic pulmonary tuberculosis.
Case VII. Several myomata, from a half to one inch in diameter.	Chronic pulmonary tuberculosis.
Case VIII. Cyst six inches in diameter.	Chronic nephritis.
Case IX. Dozen fibroids, from half to one inch in diameter.	Chronic nephritis.
Case X. Cyst of left ovary two inches in diameter.	No disease discovered.
Case XI. Dermoid cyst size of hen's egg.	Endocarditis
Case XII. Dysmenorrhea and peri-uterine inflammation.	Chronic nephritis.
Case XIII. Small cyst, one inch in diameter, in each ovary.	Chronic pulmonary tuberculosis.
Case XIV. Large myoma and several smaller ones in uterus.	Chronic nephritis.
Case XV. Salpingitis and pelvic adhesions.	Syphilis and tuberculosis.
Case XVI. Cluster of small uterine fibroids from half to two inches in diameter.	Chronic nephritis.
Case XVII. Small dermoid cyst.	General paresis.
Case XVIII. Half dozen myomata from half to one inch in diameter.	Chronic pulmonary tuberculosis.
Case XIX. Endometritis and endocervicitis.	Chronic nephritis

From the foregoing table it will be seen that in the nineteen instances in which the pelvic disease was serious in character there was present in every case except one very grave bodily disease, which was a much more probable factor in causing the insanity than was the pelvic disease. The percentage of pelvic abnormalities discovered post mortem was about twice that discovered by examination during life. This can be accounted for by the more accurate methods of making diagnoses on the dead body than in the living body.

A REPORT OF FOUR SURGICAL CASES.[1]

1. Excision of the Superior Maxillary Nerve. 2. Intracranial Neurectomy of the Fifth Nerve. 3. Cholecystectomy. 4. Esophagotomy.

By R. W. STEWART, M.D., M.R.C.S.,
OF PITTSBURG;
SURGEON TO MERCY HOSPITAL.

CASE I. *Excision of the superior maxillary nerve at the foramen rotundum.*—H. S., aged seventy-eight years, for the past fourteen years has been a sufferer from facial neuralgia. The pain was first felt for a brief period on the right side of the face, and then migrated to the left side. During the first few years there were considerable intervals of freedom from pain, but of late years the intermissions have been less frequent and of shorter duration than formerly. The pain was paroxysmal in character, and could be produced by the slightest irritation, such as eating, drinking, or friction of the painful area, which is the region that derives its sensibility from the second branch of the fifth nerve. The most painful points are at the infraorbital foramen, the border of the upper lip, and the alveolar margin of the upper jaw. The teeth had been extracted and therapeutic resources exhausted before his attending physician, Dr. Koenig, referred him to me for operation.

The operation was performed on January 16th, at the Mercy Hospital, by Carnochan's method, slightly modified, as follows: A T-shaped incision, extending to the bone, was made, the transverse portion being one-and-a-half inches in length, and lying directly over the lower border of the bony framework of the orbit. The vertical incision, of equal length, passed over the infraorbital foramen. The nerve was isolated at its point of emergence from the foramen and its peripheral branches, by a steady, but forcible, traction, were torn loose, an effort being made to remove as much of the terminal branches as possible. As the terminal branches of the fifth and seventh nerves in this situation are intimately associated, a partial paralysis of the orbicular muscles may follow this procedure. The next step was to break down the bony margin of the infraorbital foramen. This may be done with a trephine, but a large gouge-chisel is preferable. The nerve was then followed into the antrum, where it usually disappears in a groove on the floor of the orbit, which should be broken down, and the nerve isolated and traced to the posterior wall of the antrum, which in turn should be broken down in the same manner as had been the anterior wall of the antrum. The sphenomaxillary fossa was then entered, and the nerve traced backward until further progress was arrested by the anterior surface of the sphenoid. A suitable pair of forceps was gently insinuated alongside of the nerve, and the latter was firmly grasped as it emerged from the sphenoid at the foramen rotundum, and torn from its deeper connections. Hemorrhage, while troublesome, because it effectually obscured the deeper portion of the wound, was easily controlled by packing the cavity for a few minutes with iodoform-gauze. Experience has shown that drainage is unnecessary. In a case which I reported (MEDICAL NEWS, August 11, 1894) I retained the packing in the cavity for two days before suturing the wound, but in the present case primary suture was adopted. No constitutional disturbance followed the operation. The temperature never exceeded the normal. The wound united by first intention. The sutures were removed on the second day, and the patient was discharged from the hospital on the fifth day. From the time of the operation there was immediate relief from the neuralgia.

Excision of the superior maxillary nerve at the foramen rotundum destroys the sensory function of Meckel's ganglion, and renders anesthetic the integument above and over the malar bone and that of the lower eyelid, the side of the nose and the upper lip; the upper teeth; the lining membrane of the nose; the membrane of the upper part of the pharynx, of the antrum of Highmore, and of the posterior ethmoidal cells; the soft palate, tonsil and uvula, and the glandular and mucous structures of the roof of the mouth. (Quain.)

In spite of the extensive destruction of the nerve in this operation the channel of communication between the peripheral and central portions of the nerve is usually re-established in a period varying from one to five years, and in these cases a return of the neuralgia may be expected. In the case already referred to the neuralgia returned two years after the operation, necessitating an intracranial neurectomy, with removal of the Gasserian ganglion.

CASE. II. *Intracranial neurectomy of the branches of the fifth nerve, with destruction of the Gasserian ganglion.*—Alice C., aged forty-four years, unmarried, was referred to me by Dr. J. E. T. Martin. She had never had any serious illness, with the exception of an attack of influenza four years ago, which left her a legacy of tic douloureux. At first the pain, which was always on the right side of the face, was intermittent in character, lasting two or three weeks, with a similar interval of freedom from pain; but for the preceding year the pain had persisted without intermission. It was paroxysmal in character, coming on with the slightest irritation, so that eating, drinking, talking, a blast of cold air, or the slightest touch on the surface of the face, was followed by excruciating pain. It was felt most acutely at a point immediately in front of the right ear, but it was not limited to any single branch of the fifth nerve, and could be elicited at almost any point in its distribution.

The teeth had been extracted, but no benefit followed. Medicinal treatment had proved useless, and latterly opium had been resorted to with but transitory and incomplete relief. The patient was broken in health and spirit, and was profoundly melancholy.

In considering the operative treatment, it appeared evidently useless to operate on a single branch of the nerve, as the condition was not a local but a general affection of the whole nerve. I, therefore, determined to perform an intracranial neurectomy after the Hartley method, which was carried out in the Southside Hospital, December 14, 1894. An omega-shaped flap, including the bone and soft tissues, was raised from the temporal region. The base of the flap extended from the exterior angular process to a point immediately in front of the ear. In raising the flap the soft tissues were not detached from the bone, in which a groove was cut in the line of the incision with a woodcarver's chisel. The groove penetrated to the diploë, but at the upper portion it penetrated through the vitreous plate, where an elevator was inserted, and the bony plate, with its superincumbent tissues, was raised from its bed and turned downward, a fracture taking place at the base.

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[1] Read before the Pittsburg Academy of Medicine, June 18, 1894.

In order to reach the floor of the middle fossa of the skull it was necessary to bite away a portion of the projecting bone at the point of fracture, and to puncture the dura to permit of the escape of the cerebro-spinal fluid. By this means ample room was gained for subdural manipulation. In raising the dura from the fossa of the skull the anterior branch of the middle meningeal artery was ruptured at two places; the hemorrhage was controlled by ligating the proximal and distal portions of the artery.

In the search for the second and third branches of the nerve the proximity of the latter was detected before it was exposed to view by the motor effects on the muscles of mastication produced by transmitted pressure on the third branch of the nerve.

The second and third branches were exposed at their entrance into the foramen rotundum and foramen ovale respectively, where they were seized with forceps and divided. The hemorrhage at this time was most obstinate, and obscured the field of operation so that it was impossible to obtain a view of the dura sufficiently long to expose safely the ganglion. However, the proximal ends of the nerves, to which forceps were still attached, were torn out, and a dental excavator was inserted along the course of the third branch until its extremity was felt to be within the canal of the dura mater, which encloses the Gasserian ganglion; the latter was broken up as thoroughly as was possible under the circumstances. The subdural cavity, which comprised the field of operation, was temporarily packed with iodoform-gauze in order to control the hemorrhage, after which the osteoplastic flap was replaced and sutured, no provision being made for drainage.

The subsequent history of the case was uneventful and most satisfactory. There was but little shock, and immediate relief from the neuralgia. There was primary union of the wound and an almost afebrile convalescence. The woman's melancholy was replaced by cheerfulness and loquacity. At the end of the second week she was discharged from the hospital. Six weeks after the operation I re-examined the patient at my office. There had been no recurrence of pain. There was almost total anesthesia of the area supplied by the fifth nerve. The sensibility of the eye was not abolished, but was perceptibly less than that of its fellow. The only discomfort the patient complained of was the inability during eating to prevent the food from accumulating in the buccal cavity on the paralyzed side.

I reported (Medical News, August 11, 1894) an operation of this kind which at that time was the forty-first on record. It was performed after the method devised by Rose, a description of which is contained in the article referred to, as well as in the original article by Rose in the *British Medical Journal*, 1892, 1, 261. A comparison of the methods of performing this operation, as devised by Rose and Hartley, in the light of my limited experience with both operations, more than justifies the preference I gave to the latter method in my article on the subject already referred to.

In my cases Hartley's method proved not only easier of execution, but was less disfiguring, and interfered less with the functions of the lower jaw, there being less displacement of the jaw and an absolute freedom from risk of injuring either the seventh nerve or the parotid gland or its duct. It is true that I succeeded by Rose's method in removing the Gasserian ganglion *in toto*, but that was something that had never been previously accomplished by this method, and was an unexpected occurrence.

A careful review of the literature of the subject, together with some experiments on the cadaver, leaves me in doubt as to the value of Horsley's method of excising the root of the nerve as compared with that of Hartley and Rose, of attacking the ganglion or the branches. The solitary trial of the former method, with its unfortunate result, is not a fair criterion upon which to base comparative results.

Case III. *Cholecystectomy for empyema of the gall-bladder, with extra-peritoneal fixation of the pedicle.*—Mrs. E. C., aged fifty-eight years, was the mother of ten children, eight living and two dead. She had a tumor growing in the right hypochondriac space, for which she consulted her family physician, Dr. C. Gillespie, of Freeport, by whom she was referred to Dr. Emmerling, who in turn referred her to me for operation. The patient was an active, well-preserved woman, who had never had a serious illness, with the exception of pleuro-pneumonia.

About eight years ago she noticed in the right hypochondriac space a small tumor, which slowly but constantly increased in size until at the time of the operation it was about the size of the two fists. It was freely movable for a distance of about four inches, and could be pressed upward and backward, underneath the liver to the region of the right kidney.

The tumor was painless on manipulation and had never been painful at any time since it was detected. Subsequent to the operation there was elicited a history of a single but severe paroxysm of pain which preceded by a few months the appearance of the tumor. With the exception of this paroxysm of pain, which was evidently an attack of hepatic colic, there was nothing to indicate that we had to deal with a gall-bladder distended with pus and a gall-stone impacted in the cystic duct.

There was an absence of jaundice, fever or chills.

On December 6, 1894, at the Mercy Hospital, I performed a celiotomy for the purpose of removing the tumor, which was cystic in character and had a pedicle one-and-a half inches in length which extended to the lower border of the liver, the latter being in turn unduly elongated.

In the attempt to strip the peritoneal covering from the cyst the latter was ruptured near its attachment to the pedicle, and a gush of pus took place into the peritoneal cavity. A free incision was immediately made into the projecting portion of the tumor, permitting the escape of its contents, in which were noticed two small gall-stones; this established the diagnosis of empyema of the gall-bladder.

A gall-stone about half an inch in diameter was so tightly impacted in the cystic duct that its displacement was impossible, nor could it be crushed without the use of an undue amount of violence. A stout silk ligature was therefore thrown around the pedicle at a point beyond the impacted calculus, and the gall-bladder excised, the pedicle being fixed in the abdominal wound. When this was accomplished it was found impossible to replace within the abdomen the elongated border of the liver which protruded at the upper angle of the wound for about three-quarters of an inch, but subsequently atrophied, its surface being converted into granulation-tissue, which cicatrized in the ordinary manner.

Two weeks from the date of the operation the pedicle sloughed, and with it came the impacted calculus, and on January 20th the patient left the hospital for her home, the cicatrization of the stump of the pedicle being at that time almost complete.

Cholecystectomy is not by any means a rare operation, but in this case there are some features that are rarely met with, among which may be mentioned: the absence of pain or constitutional symptoms indicative of the presence of pus in the gall-bladder, the great mobility of the latter, and the extra-peritoneal fixation of the pedicle as a means of accomplishing the ultimate removal of an impacted stone in the cystic duct.

CASE IV. *Esophagotomy for stricture of the esophagus.*—Mrs. W., aged thirty-nine years, the mother of five children, always had good health until the present ailment, which she first noticed about six months before the operation; it was four months later before she experienced serious difficulty in swallowing solid food. The dysphagia steadily increased from this period until there was a total inability to swallow anything but liquids. She was referred by her physician, Dr. Foster, to Dr. Mathist, who in turn referred her to me for operation. At this time the patient swallowed only liquids, and these with considerable difficulty. She was much emaciated as a result of her enforced abstinence.

A bougie could be passed without much difficulty, but the finger inserted down the throat could distinctly feel a firm mass lying behind the larnyx and obstructing the orifice of the esophagus. The tumor was fixed to the anterior wall of the esophagus at its very beginning. The tip of the finger could be readily passed over its projecting border, which felt decidedly rough. The tumor was felt by four physicians besides myself, who were thoroughly competent to examine the case, and there was a consensus of opinion regarding the presence of a tumor and the necessity of operative treatment.

On January 12th, at the Mercy Hospital, I performed external esophagotomy, the incision being carried down on the left side of the neck between the carotid vessels and the trachea, at a point midway between the angle of the jaw and the clavicle. After the esophagus was exposed, but previous to its incision, the trachea was opened and a tube inserted, as it was feared that the hemorrhage resulting from the opening of the esophagus and removal of the tumor might otherwise asphyxiate the patient if the larnyx was not tamponed. Before opening the esophagus I passed my finger down the throat in order to define, under anesthesia, the limits and attachments of the tumor, when to my surprise I discovered that the tumor had disappeared. For a moment I was at a loss to account for the new aspect of the case; but I decided to carry my incision into the esophagus for the purpose of ocular inspection. A bougie was therefore inserted and an opening made at the esophago-pharyngeal junction. It was then seen that at the place where the tumor had been felt there were two crescentic folds of mucous membrane which partly occluded the orifice of the esophagus. A longitudinal incision was carried through these folds, and the esophagus was now found to be free. A large rubber tube was inserted through the opening in the neck for the purpose of feeding the patient.

As the hemorrhage was insignificant the tracheotomy-tube was withdrawn and dressings applied, no attempt being made to suture either wound.

Two days after the operation a severe attack of lobar pneumonia set in and seriously threatened the life of the patient. As the esophageal tube seemed to interfere with the breathing it was removed, and alimentation was carried on by the rectum and by the mouth, much of the latter, however, escaping for the first few days by the cervical wound.

At the end of two weeks the patient was convalescing from the pneumonia. The food no longer escaped from the cervical wound, bougies were passed daily, and the woman was placed on solid food. From this time convalescence was rapid, and at the end of the third week she left the hospital for her home.

This case illustrates the fact that we learn more by recognizing our mistakes than by making none. Here was a well-defined tumor which could be distinctly felt and an approximate estimate made of its dimensions and attachments, yet, in spite of this, the tumor was a phantom and disappeared under anesthesia. The true solution of the matter was that we had to deal with a stricture of the esophagus, which was associated with a tonic spasm of the underlying muscular fibers in such a manner as to give the deceptive sensation to touch and symptoms of a new growth.

I have seen an almost identical condition at the other end of the alimentary tract. In three cases of cicatricial stricture of the rectum, when there was a dense, firm mass obstructing the lumen of the bowel, I have witnessed the almost complete disappearance under anesthesia of the obstructing mass. In one of these cases I carefully observed the phenomena, and was surprised to witness, as the anesthesia deepened, the gradual disappearance of an obstruction that had previously resisted the passage of a urethral bougie, until the lumen of the bowel was almost completely restored and nothing but a slight cicatricial band was left to mark the site of a tumor so well defined that its malignant nature had been suspected.

It is doubtful whether a recognition of the true condition present in the case of esophagotomy just reported would have modified the treatment, and on that point I have nothing to regret; yet the lesson taught by it is a valuable one, and, together with my experience in stricture of the rectum, has determined me in the future not to hazard a positive diagnosis on the nature of a tumor associated with the muscular wall of the alimentary tract unless the patient is examined under full anesthesia, or the microscopic examination of a specimen removed for that purpose renders this proceeding unnecessary. For invaluable advice and assistance in these cases I am indebted to my colleague, Dr. Buchanan.

EVACUATION OF THE TYMPANUM.

By DONALD B. FRASER, M.B., M.R.C.S. Eng.,
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Early in 1891 I suffered from an abscess of the tympanum in connection with an attack of influenza, attended by sore-throat and cold in the head. While using an atomizer with Dobell's solution I felt a stream of water pass through the Eustachian tubes into the tympanic cavity, followed by a sensation of churning, as if air and mucous fluid were being intermixed. At first there was not much pain, but a feeling of uncomfortable fulness soon followed. My first thought was to evacuate the tympanic cavity, but I could not do it. All authors recommended the Valsalva or Politzer plan of treatment, *i. e.*, inflation of the middle-ear cavity. I followed faithfully the directions, but with no result. Pain increased, and became at times very severe. The inflation of the cavity at times became so painful that I had to give it up, and I felt that it was wrong treatment. An abscess formed, and, after some weeks, it burst and gave me relief. I remained five days off duty after this, and then resumed practice.

Exactly four weeks from this date I was seized with a sudden, severe, and persistent pain behind the left ear and over the mastoid cells. This attack occurred in my office while attending to a patient. A few hours later I had the Wilde incision made over the mastoid cells down to the bone, and without any effect. Next morning I felt a steady pain over the left temple, behind the left eye, and at the angle of the jaw, in addition to that at the seat of disease; the only relief I got was from leeching, applying half a dozen leeches once or twice a day. The stiffness of the neck was slightly relieved by 2½ grains of quinin, 2½ grains of caffein, and 5 grains of antipyrin taken two or three times a day. Sleep was got by using from ¼ to ½ grain of morphin at bedtime, and hot applications in the form of hot water in a rubber bottle were acceptable. The disease continued for about two weeks, when I consulted an aurist, who diagnosticated the case as "mastoid abscess" that might require an operation. Another week passed, and my sufferings became almost unbearable, when an operation was performed to give vent to the pus. It was successful, the chisel was used, and in three weeks the wound healed, my hearing returned, and I was cured. The specialist who operated made a second visit, and I was then feeling well enough to discuss the case with him. I asked was there no way of emptying the middle ear instead of inflating it, adding at the same time that I felt that if I could have performed evacuation instead of inflation I did not think I would have an abscess, and remarked that during acute congestion in the early stage of the trouble inflation was wrong as it was so painful, and seemed to me to over-distend a cavity already too much distended. My feeling, I stated, called for evacuation to relieve the tension. My esteemed and kind friend answered that he knew of no treatment that would accomplish "evacuation of the tympanic cavity," and indorsed and recommended the Valsalva and Politzer plan of inflation.

There the matter lay for three years, and the idea never again occurred to me until about one year ago, when I had a severe pain in the right ear after a twenty-five-mile drive (without my fur cap) on a windy and blustering day, and at the same time I was again suffering from influenza, with sore-throat and a "stuffed" head. The Eustachian tubes were difficult to open, and the air-bag caused me great pain, so much so that I gave it up, as the pain was aggravated by it. I was in great distress, and feared a repetition of my old trouble in the other ear. Inflation was out of the question on account of the pain it caused. The old thought of emptying the tympanic cavity recurred to me and remained upper-most in my mind, but I did not know how to accomplish it.

At last it struck me to reverse the process in working the Politzer air-bag, viz.: Collapse the bulb by squeezing it tightly, applying the nozzle, as in the Politzer plan, to one nostril, closing the other tightly, shutting the mouth and let go the bulb. I felt a slight feeling of collapse at the mouths of the Eustachian tubes, a new sensation, but no relief from pain. I was encouraged to proceed.

I thought of using the Eustachian catheter, applying it to an air-pump, and thereby get a vacuum ; I was afraid I might injure the delicate ear-structures, and desisted.

While practising the old plan of drawing mucus from the back of the nose into the back of the mouth by short inspiratory jerks, I suddenly and accidentally pinched tight the nostrils and felt distinctly a collapse of the mouths of the Eustachian tubes. I said "Eureka!" and kept up this practice while I could detect distinctly a feeling of collapse of the Eustachian tubes and tympanic cavity. I kept up evacuation of the tympanum about half an hour, and found the pain almost gone, enabling me to attend to my patients in comfort. The following night I had good rest and sleep ; for ten days I had a severe attack of catarrh of the Eustachian tubes and tympanic cavity, with a daily discharge of bloody mucus from the right nostril. I practised daily two or three times evacuation of the middle ear without discomfort.

Of course, the tubes must be inflated before one can perform evacuation of the cavity. I could only hear the watch an inch from the ear at the beginning of the attack, and after about ten days I could hear it from one to two feet away.

During acute congestion, the stage of threatened abscess, when inflation of the tubes and cavity is attended with great pain, one should discontinue it and use evacuation, which is not painful. A vacuum is thus produced that allows the over-distended vessels to empty themselves and thus restore to a great extent the equilibrium of the circulation. It assists in draining the middle-ear cavity after the abscess has burst or been opened. In association with inflammation it will be useful in the treatment of nearly all middle-ear troubles; I have no doubt it will abort threatened abscess if used properly, as I feel it did in my own case.

A strong Politzer air-bag can be utilized for evacuation of the tympanum by reversing the process used in inflation. Inflation is practised during expiration, evacuation during inspiration. Inflating the tympanic cavity is performed in the first half of treatment, evacuation in the second half. Evacuation is the converse or complement of inflation ; they work in harmony, and do not antagonize each other. In some cases inflation is used with benefit, and in others evacuation with equally happy results. In many cases one may combine the two. Evacuation is especially indicated in early stages of acute congestion attended with great pain and when there is over-distention from fluid passing through the Eustachian tubes into the middle-ear cavity. In such cases evacuation will often abort an abscess if done early and thoroughly. When the tubes are closed it will be necessary in all cases to open them up by inflation either by the Valsalva or the Politzer plan of treatment. No air-bag is needed, as a rule, but when required it should be made of strong rubber, or it will not produce a vacuum.

Without an air-bag my directions are as follows, viz. : close tightly the nostrils and mouth and fill the lungs with air, and as it does not come from without it comes from the back of the mouth, the throat, Eustachian tubes, and tympanic cavity. Some patients do not get the idea, and I ask them to try the Valsalva inflation, and draw their attention to the fact that in inflation the air is forced against the thumb and finger and in evacuation the process is reversed, drawing the air from the thumb and finger ; by this expedient most patients succeed. The drum-membrane can be felt to bulge inward, and a collapse of the tubes and cavity is produced. In many cases before hearing is regained inflation of the tubes and cavity has to be performed. The air-bag produces a vacuum, but one has to spend a good deal of time in showing how to work it, and the simple plan is the best.

In drawing attention to the evacuation-plan of treatment, allow me to say that I was seeking relief from severe pain, and the old adage was again illustrated that "Necessity is the mother of invention." If others are relieved as I was, I shall feel amply compensated for bringing this matter to the notice of the profession. I feel that an abscess was aborted by the timely evacuation of the tympanic cavity. In suitable cases I find patients much benefited, pain relieved, and in no case is it exaggerated as in the inflation-treatment. All medical men who have discussed it with me are favorably impressed, and all say it is common sense to evacuate an abscess or relieve tension when one is threatened or existing. It is nature's plan of treatment : open the abscess, remove tension, cause a vacuum, restore the impeded circulation, and get the parts back to a healthy condition.

I am under a deep obligation to Dr. McCallum, of London, for assistance given me.

State Medical Examinations in West Virginia.—We are informed that hereafter all physicians desiring to register and practise in the State of West Virginia must pass an examination before the State Board of Health. The first examination will be held in Wheeling, West Virginia, shortly.

CERTAIN PELVIC ABSCESSES, WITH A NEW APPARATUS FOR THEIR SUCCESSFUL DRAINAGE AND CURE.[1]

BY SCHUYLER C. GRAVES, M.D.,
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A SHORT time ago every collection of pus in the female pelvic cavity, excluding such as might be associated with disease of the bony structures, was supposed to be caused by pelvic cellulitis, or pelvic peritonitis; so-called perimetritis, or parametritis. The discovery of the pus-tube came, and to-day there are many who believe that every form of pelvic suppuration in women, with the exception noted, is tubal, ovarian, or tubo-ovarian. Time has proved that the former classification was wrong; but it does not take time to prove that the latter, also, is wrong.

From what standpoint soever we view this subject; whether with the eyes of the bacteriologist or with the fingers of the clinical surgeon; whether it be true or not that the gonococcus by continuity produces tubal disease, and the streptococcus by contiguity periuterine disease, and whether or not we recognize these pus-foci as primary or secondary, the fact nevertheless remains that parametric abscesses without tubal connection do exist, and present indications for treatment radically differing from those of a purely tubal or ovarian origin. For instance, an intratubal or ovarian abscess can be enucleated, whereas an extratubal or cellulitic abscess cannot.

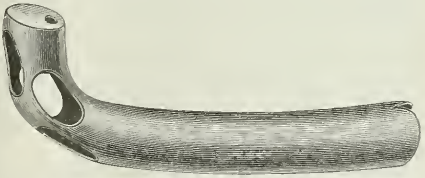
The differential diagnosis, I admit, is difficult and, at times, impossible. The history of the case, gonorrheal or puerperal, together with the *tactus eruditus* of an experienced observer, often throws light upon the subject. The most reliable, though by no means pathognomonic, indication of a pelvic abscess that is neither tubal nor ovarian in character is the crowding of the uterus laterally or, particularly, upward and forward against the symphysis.

But we here touch upon a subject that never has been and never will be set forth in type. I refer to that intuitive quality or instinct—call it what you may—that often, not always, guides the natural surgeon aright. In this connection I would like to emphasize the fact that in the practice of the healing art intuition occupies as *true* a position as does logic.

In the mad rush for glory by abdominal surgery many operators have lost sight of facts and phases of which a calm, careful consideration would have resulted in a lower mortality, although the method of securing the same, compared with the *éclat* of a brilliant abdominal operation, would be almost ludicrous. But the method and the means are of small import when taken in connection with the end in view, viz.: the banishment of invalidism at a minimum risk to life. And this is true surgery.

There is a principle in the practice of pelvic surgery bearing upon the treatment of circumscribed collections of pus that ought never to be ignored; it is this: Any inflammatory mass susceptible of enucleation should be approached through the abdominal cavity, and any inflammatory mass *not* susceptible of enucleation should *not* be approached through the abdominal cavity. Therefore, every form of extra-tubo-ovarian disease, suppurative in character, either primary or secondary, except when reason and common-sense contraindicate (and, with a view to possible temporary results, some forms of intra-tubo-ovarian suppuration, as when acute or subacute symptoms are found and vaginal bulging is noticed), should be approached through the vagina. It is remarkable what wonderful results in these cases often follow simple vaginal incision, together with thorough drainage. Great masses of exudation, through the stimulation of absorption, disappear; a solidly fixed uterus becomes again normally movable; compressed nerves cease their complaining; reflex disturbances "take unto themselves wings and soar away;" the bladder and especially the rectum functionate normally, and the weary sufferer is, as it were, born anew.

I vividly recall a case in which a badly strictured rectum was supposed to be the result of carcinomatous infiltration; but under the treatment outlined (for the case was really one of pelvic suppuration with secondary and purely inflammatory involvement of the rectum) the stricture vanished, and a woman who, with a carcinomatous death apparently staring her in the face, had been having an excruciatingly painful bowel-movement once in eight weeks, now lives to realize the luxury of a normal evacuation.



It is not necessary for me to enumerate the different phases of thought that led to the conclusions that followed my experience in these cases. Suffice it to say that such thought has been transmuted into gutta-percha (vulcanized dental rubber is as good), and a separable horseshoe drain-tube is herewith presented.[1]

Its advantages are the following:

1. It is light.

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[1] Read before the Grand Rapids Medical Library Association, March 5, 1896.

[1] The cut represents one-half of the instrument, but the complete picture may readily be imagined by the reader.

2. It is non-oxidizable and, practically, non-corrodable.
3. It is separable, and easily placed and replaced.
4. It cannot escape from the cavity of the abscess.
5. It can do no "prodding," as is the case, frequently, with the *white* rubber tubing, and which, in an abscess, soon becomes as hard as bone.
6. It is incompressible, and hence unlike *any* form of rubber tubing, the latter, under similar circumstances, collapsing, and thus failing to drain.
7. It furnishes double drainage—drainage at two different points.
8. It can serve for irrigating purposes as well as for drainage.
9. It can be kept clean, and, if thought necessary, can be removed and cleansed occasionally.
10. It can be worn indefinitely.
11. It causes no pain or discomfort.
12. It maintains patency, because of its incompressibility, and in this respect is superior to gauze packing, under the use of which openings tend to close.
13. It permits of painless dressings—an impossibility when gauze-drainage is employed.

In short, the apparatus seems to fulfil the indications, inasmuch as it is a drainage-tube that drains. I speak from experience.

When in the treatment of these abscesses the tube is to be placed in position, two incisions about three-quarters of an inch apart are made at the proper points, and a heavy silk ligature or corresponding silver wire sufficiently long is passed from one to the other through the abscess-sac and brought down to a position where it can be manipulated.

Each half of the apparatus is now threaded upon the ligature or wire (in case silk is employed wire should be used as a leader), a knot made and drawn, whereupon, with a little manipulation, the instrument will naturally and readily adjust itself, forming a complete horseshoe, the convexity of which —and this is the only portion supplied with fenestræ —will project into the abscess-cavity, the "heels" remaining out of sight and away from pressure within the vulva.

This natural adjustment is much facilitated by the fact that the "heads" of the apparatus are practically solid, plane surfaces, and are not arranged for the fitting of one part into the other.

A small loop of the ligature or wire should be left at the base for the purpose of easy manipulation and to maintain coincidence between the long axis of the instrument and that of the vagina.

By proceeding after this fashion in properly selected cases the surgeon will, in my opinion, obtain gratifying results and will acquire the same in accordance with sound surgical principles and with the least risk to the lives of his patients.

CLINICAL MEMORANDA.

A CASE OF SEPTIC EMBOLISM AFFECTING THE RIGHT EYE, THE RESULT OF PYEMIA.[1]

BY CASEY A. WOOD, M.D.,
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EXAMPLES of ocular embolism in any of its forms are uncommon because of the small number and size of the arteries supplied to the eyeball. I do not know that a reliable estimate has been made of the percentage of cases of septic ocular embolism in general pyemia and septicemia, although I think Litten's report of three examples of unilateral, and five of bilateral, panophthalmitis, out of thirty-five cases observed by him—nearly one-fourth of the whole number—will be found to be misleading in this particular. I feel certain that the eye does not become a septic depot in 25 per cent. of all cases of pyemia. However that may be, when the embolus entering the ocular circulation contains pyogenic bacteria, two things almost always happen: First, the eye is rapidly destroyed, from the development of a septic panophthalmitis, and, second, the patient shortly afterward dies. I do not say that the second result springs directly from the fact of the panophthalmitis, but it has been noticed, as a matter of statistics, that when the systemic poisoning has so far advanced that septic emboli pass from or through the heart and great vessels to the retinal or ciliary arteries a fatal termination is generally close at hand.

Putting it in another way, pyogenic emboli do not reach the interior of the eyeball until the other parts of the organism have been pretty thoroughly planted with septic depots. The same statement might, with some qualifications and for the same reason, be made regarding the ulcerative endocarditis, the destructive multiple arthritis, and the secondary pneumonia that are often found in pyemia.

There are, on the other hand, some remarkable exceptions to this rule of ocular embolism, and they are exceptions chiefly because the metastatic panophthalmitis resulting from the embolism was not, as usual, a late expression of widespread pyemia, but constituted either the sole, or one of the few and earlier, accidents of the disease. Weiss records a case of bilateral metastatic choroiditis as the only secondary deposit in the blood-poisoning following a compound fracture of the left femur. In this case there was a purulent panophthalmitis, with perforation of the cornea and extrusion of the lens of one eye, and there seems little room for doubt that if the patient had lived long enough the second eye, which became affected with cloudiness of vitreous and cornea shortly before death, would have gone the same way. Thrombotic masses were found, post mortem, in the left iliac vein that projected an inch-and-a-half into the vena cava.

Kipp, of Newark, N. J., reports a remarkable example of unilateral puerperal metastatic irido-choroiditis with loss of the eye, but recovery of the patient. I have also published the report of a survival after puerperal panophthalmitis due to septic embolism in the *American Journal of Obstetrics* for May, 1894. I saw this case on January 13, 1893:

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[1] Read before the Chicago Ophthalmological Society, March 12, 1895.

The woman was thirty-four years of age, and gave the following history: She had been married six years, and had always enjoyed good health and excellent eyesight, and during all her pregnancies (four in number) had not suffered to any extent except from a slight leukorrheal discharge. There was no evidence, so far as I could ascertain, of specific disease either in her own person or that of her husband, who accompanied her. Still her first child had been born dead, her second was living but unhealthy, her third pregnancy ended in a miscarriage, and her last child was also born dead at seven months. This last event took place on December 3, 1891. Three days before she complained of severe headache on retiring, the pain becoming almost unendurable during the night. The increase of pain was followed by a cracking noise in the left side of the head and by pain in the left eye. When morning came the left eyelids were swollen, and the patient found that she could not distinguish light with the left eye. During the day the lids of the right eye also began to swell, and soon became so heavy and edematous that they had to be lifted with the fingers to enable the patient to see with that eye. In two days this eye also was sightless; and so both eyes have since remained. The husband told me that the eyeballs protruded between the enormously swollen lids, but that pus did not commence to run from them profusely until two weeks after they first became affected. The picture presented by the patient when I saw her was one not easily forgotten. The skin about the whole orbital regions on both sides was enormously swollen and thickened; the lower lids were everted and could with difficulty be replaced; the conjunctivæ, both ocular and palpebral, edematous and covered with pus, hung in folds over the edges of the lids and hid from view the eyeballs, whose corneæ had been almost entirely eaten away, while from gaping openings in the latter pus was still oozing. Some attempt at repair had been made on the right side, where, to a partially organized leukoma, lens-matter was still adherent. The patient was weak and had a rapid pulse. The temperature was almost normal. There was no albumin in her urine, and no appearance of disease in heart or lungs. There was no evidence of pyemic foci anywhere except in her eyes. I could do practically nothing for the patient and advised her to return home.

I am indebted to Dr. A. W. Elmer, of Davenport, Iowa, who first saw the case in consultation with the family physician, for the additional information that during her second pregnancy albuminuria was present, and that she had some fever after the last mishap. The patient still lives, and her eyes, which are shrunken to about one-quarter of the normal size, do not now give her any trouble.

In Salo Cohn's interesting monograph, *Uterus und Auge*, he speaks of puerperal panophthalmitis as "the most dreadful and most severe disease of the eye that can afflict the puerperal woman, not only in respect of her eyesight, but as regards life itself."

It was during the course of outbreaks of hospital and other forms of puerperal fever (a form of pyemia now comparatively rare, thanks to the almost universal practice of surgical cleanliness) that most cases of pyemic panophthalmitis were seen. According to Galezowski, the left eye is most commonly affected, and the second eye succumbs, if at all, shortly after the first. Hirschberg, who has seen a large number of cases, gives the following general description of the disease as it occurs in post-partum pyemia: The eye-affection usually sets in between the second and third week after confinement. There is a sudden loss of vision, cloudiness of the vitreous and of the eye-ground. After one or two days there is intense inflammation of the uveal tract. Exudation shows itself in the area of the pupil, and pus is seen in the anterior chamber. Conjunctival edema and pericorneal injection follow the blindness or set in with it. Protrusion of the eyeball, with restriction of its movements, is next in order; then cloudiness of the cornea and rupture of it or of the sclera are followed by atrophy of the entire eyeball unless death sooner relieves the patient.

Virchow was, so far as I know, the first to point out the embolic character of puerperal panophthalmitis, but thinks it is not easy to say whether the choroidal or the retinal vessels are the recipients of the emboli.

Hosch found in the vitreous of an enucleated eye, taken from a living patient, organisms resembling the leptothrix, while the distended retinal vessels were filled with masses that were certainly bacterial colonies. Heiberg discovered micrococci in the lymph-channels of the cornea in a patient affected by a septic panophthalmitis of embolic origin. One of the most noteworthy of these cases was published by Wagenmann, the eye having been carefully examined, post mortem, by Leber. The autopsy showed septic foci in the cardiac valves, within the muscular tissue of the heart, and in the kidneys. Microscopic examination of the eye revealed multiple emboli of streptococci in the retinal vessels, a diapedesis of these into the substance of the retina and vitreous, masses of emboli in the vessels of the iris, ciliary body, choroid, conjunctiva, the ocular muscles, and the orbital connective tissue. In the left internal carotid, after it gives off the ophthalmic artery, and adherent to its walls there were found the remains of a thrombus, chiefly composed of white corpuscles and fibrin; no microbes were discovered in this. Wagenmann thought that there had been an embolism of the central artery of the retina, the emboli consisting of minute pieces of tissue containing cocci. The colonies thus planted in the retinal capillaries soon invaded and destroyed the other structures of the eye.

A second and more recent case of mine did not terminate so favorably as regards the life of the patient. It was, I think, almost typical of the ordinary pyemic panophthalmitis from septic embolism one most commonly meets with:

W. G. D., aged twenty-eight years, an express-driver, gave the following history: He had always been healthy, with no evidence, personal or parental, of rheumatism or syphilis. He had gonorrhea eight years ago, of which he was cured. For the past four weeks he has had a "weather crack" at the last phalangeal joint of the left hand, which, owing to exposure to the weather and the sort of work he had to do, would not heal. Two weeks ago, *i. e.*, on December 9th, he had a chill, followed by a slight fever and sweating. About the same time he noticed some swelling of the glands in his left axilla and some stiffness of the corresponding shoulder-joint. On the 12th his family physician, Dr. Bischoff, was called, and in addition to these signs found swelling in the anterior chain of glands extending to the lower border of the clavicle. The man had then a morning temperature of 102°, a coated tongue, fast pulse, and a hot skin. Since then, and on the 22d especially, he has complained of stiffness and rheumatic-like pains (without swelling) in the left shoulder and elbow, as well as numbness and pains in the right fingers. He also has swelling of the inguinal glands of both sides, as well as pains in the knees and hips. The evening temperature now increased until it was 104°, while the patient's strength gradually gave way. He died the first week in January with all the signs of pyemia.

On the evening of the 20th, eleven days after the first chill, the eyes were unaffected, but in the early morning of the 21st he found that he had only perception of light in his right eye. There was at the time some pain in the eye and right frontal region, but it was not excessive. I saw him on the 23d. The right eye presented the well-known picture of a panophthalmitis—swollen lids, swollen conjunctiva, with a thick muco-purulent discharge from the latter. The sclero-corneal junction was obscured by swelling of the mucosa, which overlapped the cornea two mm. of its entire circumference. The cornea was opaque, the dim outline of the iris being barely visible. Dr. Bischoff says that when he first noticed the ocular trouble the cornea and lens were unaffected, but that there was a whitish reflex at the pupillary area. The treatment was frequent hot fomentations of boric acid with $HgCl_2$ 1 : 10,000, and atropin. On the 25th the condition remained unchanged, except that a small slough had formed at the lower border of the cornea (about four mm. in diameter and involving the conjunctiva), from which a little blood oozed. The anterior chamber was still intact. Perception of light remained. There was no pain. Two days subsequently there was perforation of the cornea, followed by discharge of pus until the patient died. I regret that it was not possible to secure an autopsy.

Such is the account commonly given of the whole process. The order in which it occurs seems to be about as follows: First, the absorption (often from some trifling lesion, a scratch, an ulcer, a furuncle, etc.) of inflammatory agents; next, the formation of a thrombus at the point of absorption and the colonization in the former of pyogenic bacteria. From this thrombus minute portions, laden with cocci, break away, enter the blood-stream, and are carried to important organs. Here secondary thrombi and emboli form, and the eye at length becomes infected with colonies of bacteria.

ECZEMA OF MUCOUS MEMBRANES.[1]

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W. H., a physician, thirty-eight years of age, was seized with follicular tonsillitis of moderate severity, attended with the usual symptoms, such as pain on swallowing, elevation of temperature, and pains in the limbs and back. On the third day of this attack an eruption of vesicles, from the size of a pinhead to that of shot, appeared on the chin, together with a few small, ill-defined patches of similar lesions on the cheeks, forehead, palms of the hands, thighs, and about the anus. Soon after their appearance these vesicles spontaneously ruptured, giving rise to abundant oozing, especially upon the chin, where the fluid dried into a moderately thick, yellow crust. The eruption was accompanied by considerable burning and itching. Coincidently with the appearance of these lesions upon the skin in the localities mentioned the patient experienced a peculiar drawing, burning sensation in the mouth, which he compared to that produced by the application of a strong astringent, and upon inspection the inner surface of the lips (more especially the lower) and the mucous membrane of the tongue and cheeks were found to be the seat of innumerable tiny whitish, opaque vesicles, varying in size from a pin-point to a pin-head. On the under surface of the tongue the vesicles were the size of a split pea, and many of them having ruptured, shallow ulcers were produced, which were extremely painful; indeed, the pain produced by the eruption upon the tongue was so severe as to prevent the taking of food except in the liquid form for some days. A week later, after all symptoms of tonsillitis had disappeared, marked injection of the eyes was noticed, and examination with a loupe disclosed groups of minute vesicles on the bulbar conjunctiva at the inner canthi. There was also at this time slight coryza, due to an eruption of vesicles on the nasal mucous membranes. The patient now began to have pain in both knees, which proved to be the beginning of an attack of subacute articular rheumatism, confining him to bed for a week. The diagnosis of the cutaneous affection, which lasted about three weeks, could not be doubted. It was clearly an eczema of vesicular type, the only departure from the ordinary course being in the implication of the mucous membranes. This was the third attack of eczema from which the patient had suffered. Four years previously he had been under my care with a severe eczema covering the greater part of the cutaneous surface, and in this attack the mucous membranes were likewise implicated, though not to the same extent, the buccal portion being alone affected. In the first attack, which occurred six years ago, the mucous membranes were not concerned. That attack was attributed by the patient to the application of iodoform to an anal fissure which had been operated upon. In the subsequent attacks, however, no such agency was present.

In a few text-books upon diseases of the skin eczema of mucous membranes is briefly alluded to. In most its existence is either completely ignored or positively denied. In a recent book[1] the statement is made that "the mucous membranes are not subject to eczema." The author declares that "he has never seen eczema of the lips spread to the mouth or the tongue, eczema of anus to the rectum, eczema of the eyelids to the conjunctiva, or eczema of the penis to the urethra or bladder." These are remarkable statements from an observer whose experience must have been large and varied, for while it is doubtless true that eczema of the mucous surfaces is somewhat uncommon, it is equally true that it may occur either by extension from the adjoining skin, or, in rare cases, as a primary affection. The case briefly related in this paper is a striking and typical example of eczema attacking the mucous membranes; nor is this case unique, other cases having been reported by competent observers. Vidal[1] has seen an eczema of the palate characterized by the presence of a group of distinct vesicles, and the same author has seen three cases of eczema of the nostrils. Besnier[2] has reported a case of eczema of the tongue occurring in areas. The disease occurred in a patient twenty-five years of age, and was first revealed by burning during mastication or after eating. The center of the tongue was occupied by a whitish coating, almost normal in appearance. Upon the periphery this coating was found only upon the borders of rounded or oval spaces of which it formed the limits, leaving a center almost smooth. Besnier considered this a form of lingual circinate eczema, having some analogy with the so-called seborrheic eczema, because of the coincidence between the variations of the lingual lesions and alterations in concomitant eczema of the scalp or trunk.

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[1] Read before the College of Physicians of Philadelphia, March 6, 1895.

[1] Diseases of the Skin. Pye-Smith.

In connection with this case reference should be made to a curious affection of the lingual mucous membrane described under the various names, lingual pityriasis, lichenoid state of the tongue, lingual psoriasis, geographical tongue, marginate exfoliative glossitis. Molènes[3] regards it as eczema, a view which I do not believe correct, as I have had the opportunity to observe a number of cases of this kind, one in particular,[4] during a period of many months, in a patient who never, while under observation, exhibited the least tendency to eczema of the skin, nor any of the symptoms in connection with the tongue which one is accustomed to see in this affection. Indeed, there was an entire absence of all subjective symptoms.

In eczema of the vulva it is not uncommon for the inflammation to extend to the vagina, occasioning the most intense itching, and in eczema of the anus the pruritus is frequently far more severe within the anal opening than upon the cutaneous surface, extending oftentimes some distance beyond the *sphincter ani*. In a paper read before the Fourth Congress of the German Dermatological Society Von Sehlen[5] called attention to the fact that the mucous membranes adjoining the skin frequently share in the eczematous process, giving rise to inflammations of a special character in these structures. He calls attention in particular to a peculiar form of conjunctivitis associated with eczema of the face, and emphasizes the point that unless the eczematous nature of the inflammation is recognized treatment is likely to be unsuccessful. The author concludes from his observations that certain forms of inflammation of the lips, catarrh of the external ear, certain kinds of conjunctivitis, and some inflammations of the anal and genital mucous membranes are eczematous in character, and must be treated accordingly.

When eczema of a mucous membrane occurs coincidently with eczema of the skin, or arises through extension from an adjoining cutaneous surface, the true character of the affection is readily apparent, but when it exists upon a mucous surface alone the diagnosis may be difficult. Owing to the absence of a horny layer and the constant moisture of the parts involved, the aspect of eczema of the mucous membranes differs materially from that of a similar lesion of the skin. The vesicles, instead of being transparent, are whitish and opaque, and are ruptured almost as soon as they appear, leaving, when they are of considerable size, shallow ulcers, which are more or less painful, as in the case related. Instead of itching, the usual concomitant of eczema of the skin, there are smarting and burning.

Closely connected with the subject of eczema of mucous membranes is the question of the recession of the eczematous eruption or metastasis to internal organs. As is well known, there is a widespread popular belief, formerly shared by the medical profession, that the cure of a cutaneous eruption may be followed by serious results, owing to the transfer of the disease to some important internal organ. While I do not believe that the cure of an eczema may cause disease in internal organs, I am quite ready to believe that the bronchial, gastric, or enteric mucous membrane may be the seat of an eczematous inflammation in those who are the subjects of a widely distributed eczema. Other cutaneous affections occasionally attack the respiratory and gastric mucous membranes, *e. g.*, urticaria, and it does not seem improbable that eczema may do likewise.

The treatment of eczema of mucous membranes differs somewhat from that employed when the skin is the seat of the disease, both in the remedies used, and more especially in the manner of their application. When the mucous membranes of the cheeks and the tongue are concerned the use of ointments is obviously inappropriate, if not impossible, and we are forced to limit ourselves to liquid applications. As in the ordinary forms of eczema, treatment should have two aims in view, viz., the relief of symptoms and the cure of the disease. When the buccal and lingual mucous membranes are affected, itching is not, as a rule, a prominent symptom, as in eczema of the skin, but burning and smarting are usually present, and are at times so severe as to demand special attention. For the relief of these symptoms weak solutions of cocain, from ½ to 1 per cent. strength, are markedly effective. An aqueous solution of resorcin, from 15 to 20 grains to the ounce, is likewise a useful application, acting not only as a sedative but also curatively. Rinsing the mouth with a saturated solution of boric acid every three or four hours is of distinct service, though less useful than the remedies already mentioned. Upon the lips there is not the same obstacle to the use of ointments as in the mouth, and much the same applications may be employed here as upon the skin. In eczema of the genital and anal mucous membranes itching is always a prominent symptom, oftentimes completely unfitting the patient for his duties during the day and depriving him of sleep at night. In these distressing cases the patient is always clamorous for relief from the intolerable itching, and our resources are not infrequenty taxed to the utmost. In such cases carbolic acid, in an ointment of the strength of from 15 to 20 grains to the ounce, is a most useful remedy. Cocain is likewise a very effective application for allaying the pruritus. In a case of eczema of the anal mucous membrane under my care nothing gave the relief that this remedy afforded, a single application of a 2 per cent. ointment being sufficient to allay the pruritus completely for from six to eight hours, so that the patient slept comfortably the greater part of the night. Menthol is another antipruritic of value in these cases, but it is much less reliable than the other remedies mentioned. While it oftens acts most happily, it sometimes irritates, even in weak ointments. In the conjunctivitis accompanying eczema of the face von Sehlen has found weak ointments of ichthyol placed in the conjunctival sac more effective than any other remedy he has tried.

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[1] Gazette des Hôpitaux, 1880, p. 68.

[2] Journ. de Méd. et de Chirurg., December, 1889.

[3] Archiv de Laryngologie, December, 1889.

[4] Vide paper by author: Transient Benign Plaques of the Tongue. MEDICAL NEWS, October 29, 1887.

[5] Monatsheft f. praktische Dermatologie, Bd. xix, No. 1.

A CASE OF INFANTILE ECLAMPSIA WITH RIGHT HEMIPLEGIA, FOLLOWED BY LEFT HEMIPLEGIA AND RAPID RECOVERY.

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FLORENCE R., twenty-one months of age, a well-nourished infant, of healthy parentage, after a restless night, was attacked about 11 o'clock in the morning, January 28th, by general convulsions, while the mother was preparing its bath. A neighboring physician, Dr. O. E. Snodgrass, saw the child shortly afterward, and endeavored to control the clonic spasms by the administration of ether, and succeeded in relieving the patient after the convulsions had continued for more than an hour. A hot bath and an emetic were now given, and the little patient appeared to have recovered from an ordinary attack of eclampsia. About 1 o'clock the infant was seized with another convulsion while standing in the center of the room, where it had been playing with its toys. The doctor being hastily recalled, found the child with clonic movements restricted to the muscles of the left side of the body, the right side being motionless and relaxed; the eyes were strongly rotated to the left with each clonic convulsion; there was no tonic spasm observed. The administration of ether was again tried; but, after more than two ounces had been used, it was found ineffectual and chloroform was substituted, which rendered the convulsions less violent, but did not entirely check them, even when the child was rendered comatose. As the strength of the patient was failing, and there was no prospect of cessation of the spasms after an ounce-and-a-half of chloroform had been given, an unfavorable prognosis was announced and counsel requested about 6 P.M.

I saw the child an hour later; she was lying on her back, her throat filled with mucus, and apparently dying. The right side was relaxed and motionless, while the face, neck, trunk, arm, and leg on the left side were affected by rhythmic clonic convulsions, as if the motor centers of the cortex were regularly stimulated by an electrode about twenty times a minute. During each convulsion the head was turned to the left and the eyeballs were also strongly rotated upward and to the left. The thumb was not flexed and there was no tonic spasm. The child had sixteen teeth, and its gums were not swollen. Its temperature was not above normal, and there was nothing to warrant the supposition that it was suffering with any eruptive disease. The mother denied that indigestible food had been swallowed and stated that the bowels had moved naturally the day before, and that the child was only slightly constipated. She stated, however, that the child was in the practice of constantly picking at the blanket or the carpet and of swallowing the fibers of wool. A month previously, the baby had had a coryza and a bronchial catarrh, from which, however, it had quite recovered. The child was well-formed and not rachitic, and when well was quite active upon her feet, going all over the house. She had never had convulsions or nervous disorder before. No opiate had been administered, and the cause of the attack could not be surmised. There was, however, a spot of ecchymosis over the left frontal eminence, which the mother attributed to a slight blow upon the bed-post, and positively denied serious injury by a fall out of bed or other traumatism.

It was agreed that the hemiplegia and convulsions might be due to a brain-lesion affecting the left hemisphere, with transmitted irritation to the medulla, possibly to a hemorrhagic effusion, with a strong probability that it was traumatic. On the other hand, the symptoms might be entirely of reflex origin from intestinal irritation, over-stimulation having produced secondary congestion of the cortical motor centers on the left side (congestive apoplexy and hemiplegia). It was decided to adopt a plan of active treatment suited to the latter view, while not causing sufficient disturbance to do injury in case the organic origin should be confirmed by the subsequent course of the case. The probability that a fatal termination would shortly take place warranted even extreme measures, since they would not add to the gravity of the condition.

The plan adopted was, in the first place, to remove the cause of the noisy, obstructed breathing by wiping out the pharynx with several masses of absorbent cotton upon a Sajous' applicator, which relieved the respiration, and the child's face soon assumed a less deathlike look. A mixture of chloral hydrate and potassium bromid was used for rectal injection. With the understanding that it contained only twelve grains of each to the ounce, half of this quantity was immediately injected into the bowel. This was followed in about fifteen minutes by four ounces of mixture of asafetida, and shortly afterward by half an ounce of glycerol. A free evacuation resulted, the matter containing some masses of casein. Ice was applied to the nucha and over the cranium, and a mustard-plaster to the dorso-lumbar region. No improvement resulting, half an hour later the chloral and bromid, asafetida, and glycerol enemata were repeated, causing another free discharge from the bowels. The convulsions now became less severe, and in about fifteen minutes ceased altogether, and the child slept. After resting naturally for twenty minutes, a grain of calomel in a teaspoonful of castor-oil was given, and produced another evacuation shortly afterward. After an hour's sleep, in order to be certain that it was not narcotized with chloral, a cold douche to the head was given, which roused the child to sensibility, and it cried vigorously. The eyes were now normal and the hemiplegia of the right side had disappeared, and it was observed that the movements of all of the limbs were normal.

After a night's rest the patient seemed fretful and slightly feverish, and it was observed that it did not use the left arm and could not stand up, because the left leg was powerless. On examination sensation was found to be markedly diminished and the faradic muscular reaction also was sensibly reduced; but a stimulation produced movements of the arm and leg, the left hemiplegia (or paresis) was thought to be due to exhaustion of the motor cells of the cortex, or slight inflammation of these elements from over-stimulation, though it may have been entirely peripheral. The muscles of the arm, thigh, and leg were relaxed and soft. Massage was ordered to be gently practised, increasing the rubbing and kneading by degrees. Stimulation by flagellation with a towel having a fringe to it, wet with ice-water, as practised by S. D. Gross, was also done daily. After the first week galvanism was applied, twice weekly, to the thigh and leg, followed by faradism. The arm having recovered completely under massage, electricity was not used except for the lower extremity. The compound syrup of the hypophosphites containing strychnin (National Formulary) was given, ten drops three times daily. On March 6th it was noted that the child appeared in good health, and appetite and digestion were good. The muscles of the thigh and calf had regained their tone and the patient could now walk about the room without assistance. The muscular balance of the knee-joint and ankle-joint had been restored, but the limb had not regained full power, and it frequently gave way, causing the child to fall.

With regard to the function of speech, it may be noted that during the right hemiplegia the patient was comatose or unconscious. During the period of left hemiplegia she was very fretful, and although usually quite talkative, she limited her conversation to very few words, and, indeed, almost lost the use of language for the first week, after which she gradually picked up her former accomplishment and now talks as freely as ever.

The points of interest to be noted are, first, the double hemiplegia without brain-lesion, apparently arising from such slight cause as intestinal irritation, owing to the presence of some masses of casein, or possibly to some small collection of wool-fibers, although nothing of the kind was recognized in the evacuations. Secondly, is the resemblance of this case of eclampsia with hemiplegia to one of cerebral hemorrhage, the diagnosis being rendered more uncertain by the presence of a bruise upon the forehead. Thirdly, is the large amount of anesthetics and antispasmodics administered. During the day Dr. Snodgrass had very carefully given two-and-a-half ounces of sulphuric ether and one-and-a-half ounces of chloroform without controlling the convulsions, except temporarily, while anesthesia was complete. It was ascertained on the following day that one ounce of chloral-and-bromid mixture contained thirty grains of chloral hydrate and forty of potassium bromid; of this a teaspoonful had been given by the mouth, and the remainder of the ounce in two rectal injections, as already stated. Although I was not aware at the time that the mixture contained such large amounts of chloral and bromid, it seems a just inference that a smaller quantity would not have produced such favorable results, for when I first saw the case prompt measures were required to avert the impending fatal result, and the convulsions did not yield until the second injection had been given.

The lessons of this case are that infantile eclampsia should be vigorously treated, no case being regarded as hopeless while life remains; and that large doses of chloral and bromid may be given in enemata, provided measures be taken to remove the excess from the intestinal tract after a sufficient quantity has been absorbed to stop the convulsive movements. In ordinary cases the mixture of asafetida given in this way has proved efficient, in my experience, without resorting to the use of chloral or bromid.

On April 16th the child was perfectly well, and had been so for nearly a month.

MEDICAL PROGRESS.

Successful External Urethrotomy for Impacted Urethra Calculus, with Gangrene and Rupture of the Urethra—Extensive Extravasation of Urine and Retention of Urine for Nine Days.—At a recent meeting of the Philadelphia Academy of Surgery Dr. Thomas G. Morton reported the case of a well-grown youth, aged sixteen years, who had had irritability of the bladder and frequent desire to urinate for a long while, and occasionally noticed a stoppage of the flow while urinating. Finally the interruption became permanent. On examination a stone was found impacted in the penile urethra, about two-and-a-half inches from the meatus. In efforts at extraction the stone crumbled to pieces, but it was removed, the patient subsequently passing about a cupful of blood, but not emptying his bladder. A few hours after the operation the penis and scrotum swelled, forming a tumor which became dark-colored in patches. There was absolute retention of urine. This condition continued for nine days, when there was found marked shock with great feebleness and evidences of septic fever. The penis and scrotum were edematous and enormously swollen, assuming the form of a dense globular tumor, the size of a large orange; the skin of the penis and scrotum was gangrenous. Scarification of the surface had been practised, but without relief. The bladder was distended to its full extent, and the tumor was the result of extravasation consequent upon rupture of the urethra due to gangrene.

An incision was made in the median line, extending from the penis, through the scrotum, to the perineum and a large collection of urine was discovered and which formed the tumor. The incision divided the scrotum in the middle and exposed the urethra, which was gangrenous to the extent of about two inches; the spot where it had ruptured was in front of the scrotum, evidently where the stone had lodged. The perineal urethra was then opened and the bladder evacuated. A drainage-tube was slipped into the bladder from the wound, and a tube was also passed from the meatus. After two weeks both the drainage-tubes were removed. The dead tissues soon separated, leaving a healthy granulating wound. The bladder was evacuated daily with a silver catheter, and the further progress of the case to recovery was uneventful. A month after the operation the wound was in a healing condition, with the large urethral fistula still open.

It was thought that the repair of that portion of the urethra which was destroyed might necessitate a plastic operation, especially if it should be found that in the process of cicatrization contraction and deformity of the organ were likely to occur.

A Rare Anamaly of the Uvula.—KOCH (*Annales des Maladies de l'Oreille*, 1895, No. 3, p. 234) describes a uvula of unusual length which he had occasion to remove. It occurred in a patient from whom a small lipoma upon the nape of the neck had been excised. The wound healed kindly, but an eczematous condition developed from the use of iodoform. The patient made no complaint referable to his throat, the examination of which was made as a routine measure. Upon depressing the tongue the uvula was found to be so long that its inferior extremity was beyond the range of vision, and it was accordingly amputated. The removed portion proved to be an inch and a third long, and that which remained measured an additional third of an inch. The portion of the uvala attached to the velum of the palate presented a normal appearance, but the body was cylindrical, and became gradually attenuated to a diameter of one-tenth of an inch, and to the extremity of which was attached a tumor about the size of a large lentil. The color of the uvula passed insensibly into that of the adjacent parts, but the tumor at the extremity was pale and translucent. A vessel of considerable size coursed along the uvula and reached the lenticular body, upon which it formed an intricate vascular network.

Resorcin as a Test-agent for Albumin.—CARREZ (*Journal des Sciences Mèdicales de Lille*, 1895, No. 12, p. 272) recommends the employment of a solution of resorcin, one to three, as a test-agent for the presence of albumin in urine. The solution is overlaid in a test-tube with urine, and if albumin be present there immediately forms a white ring at the line of junction of the two fluids. Alkaloids (at least in such concentration as they may be present in the urine), urates, and urea give rise to no ring. The presence of peptone may, however, do so, but this disappears if the tube is placed in boiling water. Resorcin is believed to be no less delicate a reagent for albumin than nitric acid, and it possesses the advantage that a response occurs whatever the reaction of the urine.

THERAPEUTIC NOTES.

The Treatment of Diphtheria with the Antitoxin.—In the discussion upon the results of the treatment of diphtheria with the antitoxin recently held at the Thirteenth Congress of Internal Medicine at Munich, HEUBNER (*Münchener medicinische Wochenschrift*, 1895, No 14, p. 339) related that the statistics of more than three-thousand cases of diphtheria treated in the hospitals of Berlin and throughout the world with the antitoxin until the end of January showed a mortality of twenty per cent. Of two-hundred-and-seven cases treated at the Charité, at Berlin, one-hundred-and-eighty-one were uncomplicated and twenty-six were complicated. The total mortality was thirteen per cent., that of the uncomplicated cases ten per cent.

BAGINSKY (*Ibidem*, p. 340) related that of five-hundred-and-twenty-five cases treated at the Kaiser and Kaiserin Friedrich Hospital in Berlin until March 15th the mortality was fifteen per cent., while from 1890 to 1894 the average mortality was 41.1 per cent. Over and above the mere figures the good results were to be observed in an extraordinary improvement in the general condition, in the decline of the temperature, and in the favorable influence upon the local lesions.

Widerhofer (*Ibidem*, p. 341) related that between October, 1894, and February, 1895, he had treated three-hundred cases of diphtheria with the antitoxin. Among the first hundred there were twenty-four deaths; among the second hundred, thirty; and among the third, seventeen. The total mortality was 23.7 per cent., but excluding those in which death took place in the first twenty-four hours, this was but 14.3 per cent. In previous years the mortality ranged between 40.8 and 56 per cent.

CRETZ (*Wiener klinische Wochenschrift*, 1895, No. 14, p. 254) gives the following figures from the pathologic department of the Kaiser Franz Joseph Hospital, Vienna, from January 1, 1894, to March 24, 1895. There were two-hundred deaths from diphtheria; of this number, fifty-three occurred between January 6 and March 31, 1894; 49 between April 1st and June 30th; 36 between July 1st and September 30th; 43 between October 1st and December 31st; 19 between January 1 and March 24, 1895. The last period includes that during which the antitoxin was used. During this time the mortality from diphtheria was 12.7 per cent.

A Case of Chronic Trional-intoxication.—REINICKE (*Deutsche medicinische Wochenschrift*, 1895, No. 13, p. 211) has reported the case of a woman, twenty-six years old, suffering with acute hallucinatory insanity to whom trional was administered with intermissions for a period of fifteen weeks for the relief of sleeplessness. The patient was in bed all of the time and received ordinary food. The bowels were moved regularly and the urine was examined from time to time. The drug was given every second night in doses of fifteen grains in hot water a half-hour before bedtime, the patient receiving in all six-hundred grains in the course of one-hundred-and-seven days. Toward the end of the period named the patient complained of headache, vertigo, muscæ volitantes, and abdominal pains, with slight elevation of temperature; small, rapid pulse, nausea, and looseness of the bowels, while the urine contained blood and numerous hyaline and granular casts. The urine continued in this state, with gradually diminishing intensity, for more than a week, but the general manifestations persisted for a somewhat longer time.

For the Pains of Posterior Spinal Sclerosis.—BLONDEL (*Revue de Thèrapeutique*, 1895, No. 7, p. 203) has reported the case of a man, thirty-one years old, presenting symptoms of posterior spinal sclerosis, including severe lancinating pains. The patient was instructed to lie daily upon his back, flexing the thighs upon the trunk and the legs upon the thighs, and, by means of a suitable apparatus, supporting the head and neck from the thighs, in the hope that in this way the vertebral column would be extended, with consequent relief of the symptoms referred to the posterior columns of the cord and the posterior nerve-roots. As a matter of fact, the pains subsided and the other symptoms also receded. The condition of improvement continued for a period of two years, the extension in the manner indicated being repeated every few weeks or whenever threatenings of a return of the symptoms appeared.

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OF MEDICAL SCIENCE.

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SATURDAY, APRIL 27, 1895.

SHOULD PHYSICIANS DEAL HONORABLY AND COURTEOUSLY WITH ONE ANOTHER?

THE answer to the question of the heading perhaps seems so self-evident as to convict it of platitude or even stupidity. It seems a generalization so true that discussion is useless. Some think that it is to be assented to by everybody in theory and to be contradicted by everybody in practice. Almost any physician will upon inquiry give one any number of instances of flagrant unethicality and discourtesy on the part of most reputable physicians toward one another that have come under his own personal observation. Thus, at a social gathering the great professor meets a lady suffering from some minor ailment, and who says that her physician has not yet succeeded in curing her. Thereupon the great man writes a prescription, and says, "Take that, and see if it won't do better." The regular attendant, of course, duly hears of this, and there is engendered an ill-will that does not soon die. There are not a few who judge that their personal reputation and fame and experience give them the right to be careless of others' rights, and to neglect the finer and gentler considerations that were much more punctiliously observed when they were younger and less famous. The cynical dub this type of demeanor by the name of megalocephalic ethics.

Allusion may be made to urban ethics as contradistinguished from non-urban or country ethics. One might liken our conception of professional courtesy to the law of gravitation, acting inversely as the square of the distance. What city physician, for example, receiving a patient from the country, and especially from a neighboring, a distant, or a rival city, ever thinks of inquiring as to the discharge of the far-away unknown *confrère* who may have been up to the day in charge of the case? Our ethical ideas and rules are such that we have hardly begun to think of them as extending beyond a certain geographic boundary. Within certain limits the code may (perhaps) be permitted to hold, but we tacitly accept the laughable distinction that codes and courtesies have quite definite topographic qualities and distinctions. Morality is quite often a matter of miles. Thus is engendered a spirit of rivalry and jealousy founded solely upon distance or locality. The practisers in one city feel that every patient they can get away from the rival city so much the better, and those in the smaller towns or in the country are chagrined at the "hoggishness" of the city doctor, etc. Verily, topographic ethics is a potent instrument of evil.

To continue the enumeration we may include in the list a variety of courtesy that depends upon the reputation or social distinction of a physician. One may be careful and courteous as regards elders and superiors, but be as careless and discourteous to those who are younger and less powerful, to those who have no "influence," or to those toward whom one may have a personal dislike. The mark of a true gentleman is that he is gentlemanly toward the lowest inferior. No sycophant ever had a glimpse of genuine gentlemanliness. He who construes the Code of Ethics so that it is operative only to those dispensing power or favor, but inoperative toward those "below," might be a good ward-boss or Senator, but he will soon be found out in medicine. Medico-political ethics is not a delectable variety.

A young physician from one of the Western States relates that there is within his neighborhood a firm of specialists that has so absorbed "the business" within the city and including a radius of some one-hundred miles thereabout that other specialists in the same branch are not permitted to settle within this pre-empted sacred circle. Patients sent for consultation by a would-be competitor are not again returned, but are held as regular patients, all the arts of commercial rivalry being regularly used to establish and hold the market against all rivals. Monopoly-ethics does not advertise its methods, but the variety is perhaps more common than many suspect.

There is also a type that might be called ring-ethics. It arises as a result of a kind of offensive and defensive alliance between one general physician and half-a-dozen or more specialists for the purpose of throwing practice into each other's hands. Take the following actual instance: An oculist receives a patient coming to him in a regular and legitimate way; the eyes indicate profound systemic disease; the oculist, with perfect courtesy, sends the patient to the family physician for general diagnosis and for consultation as to treatment—whereupon the family physician secretly transfers the patient to another oculist who is a member of his ring. This disreputable proceeding is defended upon the ground that as the general physician he has the right to recommend his patients to whatsoever specialist he pleases. Oculist No. 1, who has had his patient stolen, begs to have the question in dispute submitted to any Board of Censors or to the judgment of any two or three reputable physicians. Of course, such a reference is refused. Upon inquiry of "those in authority," and who are qualified to judge, one is told that it is useless to bring such questions of ethics before the Boards of Censors of the great medical societies to which this "gentleman" belongs, and upon diligent attempts to learn why this is so, and why Boards of Censors of medical societies will not decide such questions, and will not act in such cases, one finds—well, "a condition of affairs." Ringster-ethics is responsible for a great deal of sharp dealing both within and without the ring, and if carried much farther in some cities will lead to profound harm to the profession and to the public.

A young man was recently starting in practice, and filled with the virtue of youth and with the lessons of theoretic ethics still echoing in his ears, he was shocked beyond measure to learn that a great leader in medicine had taken his patient while yet under treatment, without a word of inquiry of the patient as to whether he was being treated or had been discharged by another, and of course without any thought of consultation. In this dazed and grieved state of mind he asked an elder honored medical friend if such things were common among physicians. Should one take a patient without thought, care, or inquiry as to whether another were or just had been the physician in charge?

"Young man," said this world-experienced mentor, "you just take every patient you can get, and don't worry yourself about the other fellows. Let 'em whistle! They'll take your patients, if they can get 'em."

Now, this advice was neither good advice, nor was it by any means true; but it is true that this advice was given, and that, united to the experience, it turned a naturally honorably minded young man into a self-seeker, reckless of code or of courtesy. Moreover, it is true that the fact stated in the advice is altogether more common than appears in the printed proceedings of medical societies.

But it becomes a pertinent question if all these various kinds of ethics, the megalocephalic, the topographic, the politic, the monopoly, or the ring varieties, are ethics at all. Are they not much more inethics, and are not those who practise such sectarian ethics opposed to the honor and progress of the profession?

As to the treatment of the disease—"that is another story"—but, in passing, why will medical societies not take notice of the most outrageous infractions of the code by their members, and why will their official censors not pronounce judgment upon ethical questions in dispute? Are we all proceeding, without protest and without solicitude, to ruin and individualism, and to utter neglect of the principles and practices whereby alone we can still keep a noble *esprit de corps* within the profession, and save it from the all-conquering crush of greed and commercialism?

THE CAPRICIOUS MUTILATION OF ANIMALS.

Dr. George Fleming, formerly chief veterinary surgeon of the English Army, contributes to the *Nineteenth Century* (March, 1895) an article on the fashionable mutilations of animals that should be widely read. Ever since history opens we find man insanely determined to mutilate the animals in his charge. Over 1200 years ago a church council declaimed against the custom, and to-day one may see our fashionable nincompoops riding or driving horses with cadoganized tails. It seems a hard fight—this of civilization and sympathy for animal life against the immortally brutal stupidity that demands some disgusting mangling or cruelty of man's domesticated animal friends and servants.

The principal mutilations that have been or that still are carried on (these superstitions never die) are the following:

Ear-cropping. This is probably as old as dog-fighting, and may have arisen as a means of preventing the other dog from getting "a hold." Prize-fighters also crop their hair for a similar reason, and the foot-ball hero lets his hair grow overlong, also, we believe, as a protection of another sort. In both the dog and horse ear-cropping is believed to be a frequent cause of deafness and of diseases due to flies.

Ear-slitting is another form of mutilating the ears of both horses and dogs.

Nostril-slitting, for what earthly reason is unknown, was formerly prevalent in England.

Hogging is the term applied to cutting the manes of horses so as to leave a short, bristly ridge of hair.

Tail-cropping is the operation of cutting, or, preferably, of biting off the last bone of the tail of a dog. The operation is believed to prevent rabies, the "sinew" being thought to be a worm that prevents the tail from growing and thus producing madness.

Worming is the excision of the frenum of the dog's tongue. The belief is as old as PLINY that the frenum is a worm that causes rabies. Of course its removal prevents rabies. This "worm" was given persons bitten by a mad dog as a prophylactic against hydrophobia.

Docking is shortening of the tail of the horse, a custom so prevalent as regards the dog that the word *cur-tailed* became the designation of the fact in all animals. The *dock* is the part of the tail remaining, leaving out of consideration the hair. The operation of docking was believed in the seventeenth century to increase the strength of the back of the horse. The reason given for a supposed fact, as well as observation of the effect, is a striking proof of the stupid non-science and nonsense of the horseman type of mind.

Nicking or *cadoganizing* the horse's tail consists in cutting the muscles and tendons on the under side of the tail, filling the gashes with tow, and keeping the tail erect or upright until the healing in this position is complete. Besides being called the CADOGAN tail (after WILLIAM, subsequently LORD, CADOGAN, who introduced the pernicious custom) this is also called *cock-tail* or *bob-tail.* When the CADOGAN tail is made to curl over the back it is called *squirrel-tail.* There are also other abominations, self-explanatorily called *rat-tail, cow-tail, mule-tail.* But the designation after LORD CADOGAN should always obtain, in order that his lordship may always have all the honor of the infamy that properly belongs to him. This example of eponymic literature we also commend.

DR. FLEMING says that as many as forty horses died in one regiment as a result of cadoganizing them, and that battles were thereby lost. The sufferings of the mutilated animals from flies were nothing, but when money and battles and politics were affected, then was it time to be stopped! Our modern fashionable mutilators aver that cadoganizing or docking is necessary to prevent accidents from the reins getting under the tail, but riding-horses are more frequently thus mutilated than driving-horses.

When driven from one excuse to another, the desire to be cruel takes final refuge in blinders that are so closely applied to the horse's eyes as to rub the lashes and chafe the lids smooth, with resulting eye-disease; in bits that are diabolical in their harshness; or in check-reins, the exhibition of which makes a ride to all sensitive and sensible people in fashionable drive-ways, instead of a pleasure, only one prolonged emotion of indignation and disgust.

There is more torture, gratuitous, cold-blooded, hideous torture of animals displayed in one day and in any fashionable street or park driveway than takes place in the physiologic laboratories of the United States in a year. Let the antivivisectionists take hold of this outrage and put an end to it, and then perhaps we shall believe in their sincerity—most certainly in some adequate and intellectual conception of their work.

EDITORIAL COMMENTS.

Opposition to a Four-years' Medical Course of Study comes from the five medical colleges of Baltimore. They "doubt the advisability of adopting a four-years' course at this time," and the delegate of one of them gives notice that he will present at the next meeting of the Association of American Medical Colleges an amendment to the constitution reading as follows: "Candidates for the degree of M.D., in 1904 or thereafter, shall have pursued the study of medicine for a period of four years, and attended at least four courses of lectures of not less than six months' duration each." At the San Francisco meeting it will be remembered that the Association voted that graduates of later date than 1898 should be required to furnish evidence of attendance upon four courses of lectures, in different years, of not less than six months' duration each. The colleges now opposing this four-years' course, and wishing to recede from the action taken, are:

THE FACULTY OF PHYSIC, UNIVERSITY OF MARYLAND.

COLLEGE OF PHYSICIANS AND SURGEONS OF BALTIMORE.

WOMAN'S MEDICAL COLLEGE.
BALTIMORE MEDICAL COLLEGE.
BALTIMORE UNIVERSITY SCHOOL OF MEDICINE.

In this connection we give herewith the results of the examinations during the last ten years by the State Board of Medical Examiners of North Carolina:

	Licensed.	Rejected.
NEW YORK SCHOOLS:		
University of New York	41	2
Physicians and Surgeons, New York	4	1
Bellevue Medical College	26	6
Long Island Medical College	3	0
PENNSYLVANIA SCHOOLS:		
University of Pennsylvania	5	0
Jefferson Medical College	46	3
Woman's Medical College	1	2
Medico-Chirurgical College	3	2
MARYLAND SCHOOLS:		
University of Maryland	108	23
Physicians and Surgeons, Baltimore	108	45
Baltimore Medical College	20	28
Baltimore University	4	7
VIRGINIA SCHOOLS:		
University of Virginia	17	0
Medical College of Virginia	7	1
University College of Medicine	2	0
KENTUCKY SCHOOLS:		
Louisville Medical College	26	17
Kentucky School of Medicine	9	2
University of Louisville	4	7
LOUISIANA SCHOOLS:		
University of Louisiana	2	0
Tulane University	3	0
GEORGIA SCHOOLS:		
Atlanta Medical College	4	7
University of Georgia	2	3
Eclectic Medical College	0	1
Southern Medical College	2	5
SOUTH CAROLINA SCHOOLS:		
Charleston Medical College	0	1
Medical College of South Carolina	7	0
NORTH CAROLINA SCHOOLS:		
Leonard Medical College	19	6
North Carolina Medical College	4	2
TENNESSEE SCHOOLS:		
University of Tennessee	3	8
Vanderbilt University	12	15
Chattanooga Medical College	1	0
Nashville Medical College	1	0
Tennessee Medical College, Knoxville	0	1
MISCELLANEOUS SCHOOLS:		
University of Michigan	1	0
Western Reserve University, Ohio	1	0
Howard University of Washington	2	3
Miami Medical College, Cincinnati, Ohio	1	0
Pulte Medical College, Cincinnati, Ohio	1	2
Georgetown University	1	0
McGill University, Montreal, Canada	1	0
St. Louis Medical College	0	1
University of Vermont	1	1
Medical Department Northwestern University, Chicago	1	0
New York Infirmary	1	0
Rush Medical College	1	0
No College at all	2	5

In view of these figures the discriminating reader will hardly need an added word of comment. It seems strange that from those schools whose graduates fare the worst in competitive examinations should come opposition to an elevation of the standard of medical education. One would suppose that it would be precisely they that would be most anxious for the higher education. One wonders what arguments may be found or devised to support the contention.

Let every friend of professional dignity and honor arouse himself and use every right means to bury the absurd proposal beneath such an avalanche of adverse votes that it shall never be heard of again. The next (the Sixth Annual) Session of the Association of American Medical Colleges will be held at the Rennert Hotel, Baltimore, Md., at 2 P.M., Wednesday, May 8, 1895.

The Quack Manufacturing Pharmacist.—The appended communication, signed by a well-known manufacturing pharmaceutic house is being deposited upon the doorsteps and thrown into the vestibules of the houses of a large American city:

> "DEAR MADAM: We venture to address you by this medium, rather than that of a circular, to present to your notice the claims of ——— as a certain (and quick) remedy for sick or nervous headaches, a remedy without an equal among the various articles now recommended for the relief of those distressing headaches which upon some days render life scarcely worth the living. Perhaps after a hard day's work, with its many trials and tribulations, you find yourself completely fagged out, both mentally and physically, and your cry is, 'If I only could find something to relieve that distressing headache.' Relief is what you want, and you want it quick (*sic*). Then why not have *the remedy* always on hand? ——— *is the one preparation that will bring relief.* ——— is a conservator of energy, the use of which as a tonic to the nerve-centers *prevents* headache, and will allow you to do an increased amount of brain-work which you are unable to do without its aid.
>
> "——— is largely imitated by unscrupulous manufacturers, and if you should not obtain the desired relief from its use, you would doubtless find an explanation in the label reading ——— or some other ———, which are infringements and intended to mislead purchasers into the belief that they are getting our remedy.
>
> "——— is made to cure; infringing ——— are made to sell. Do you see the difference?
>
> "——— is not expensive; it is put up in bottles holding two doses, retailing at ten cents, also in larger bottles retailing at one dollar, and is on sale at all drug-stores.
>
> "Try ——— and be convinced that you *can* get relief.
>
> "Respectfully, etc."

The bare publication of the appeal would seem to carry with it sufficient condemnation without added comment. A house capable of such action is scarcely deserving of the confidence of either the community or the medical profession. What irony is contained in the statement that this potent remedy "is largely imitated by *unscrupulous* manufacturers;" no doubt also the methods of this *scrupulous* firm will find ready imitation. We are confident, however, that they will not receive the sanction of the considerable body of reputable pharmacists and manufacturers. Self-respecting and reputable concerns have enough to do with looking after their legitimate business, and need not resort to this means of assuming the function of the physician.

What Answer Has the Illinois State Board of Health to Make?—At a meeting of the Faculty of the Northwestern

University Woman's Medical School the following resolutions were unanimously adopted and ordered to be placed before the Illinois State Board of Health:

Whereas, On three occasions within the past three years the Illinois State Board of Health has licensed to practise medicine in this State students who have not properly qualified themselves for such duties, and whose incompetence has compelled us to withhold the degree of Doctor of Medicine; and,

Whereas, By common report we are informed that the State Board has adopted a similar policy with reference to numerous other persons; therefore,

Resolved, By the Faculty of the Northwestern University Woman's Medical School that the State Board be requested hereafter to make its examinations so rigid that persons incompetent to obtain the degree of Doctor of Medicine from first-class medical colleges cannot obtain licence to practise from the Illinois State Board of Health.

Resolved, That the State Board of Health be urged to do all in its power to secure a modification of the State law, so that the privilege of examination for licence to practise in this State can only be obtained by graduates of recognized medical schools in good standing.

Resolved, That for the protection of the lives and health of our people we believe it the duty of the State Board of Health to do all in its power to prevent the entrance into the medical profession in this State of any persons not properly qualified; and,

Resolved further, That in the interests of humanity and medical science we believe the State Board should make its standard of qualifications as high as that of the best medical colleges in this country, and that it should do all in its power to aid and encourage the efforts of the profession and the people for thorough medical education and higher requirements of licentiates and for the degree of Doctor of Medicine.

Verily, the State of Illinois suffered an irreparable loss in the death of that sturdy advocate and upholder of higher medical education and better qualified physicians, the late John H. Rauch.

* * *

A Defeat for Quackery.—Readers of THE MEDICAL NEWS will doubtless recall the fact that a year-and-a-half ago a certain proprietary concern engaged in the exploitation of a so-called "cure" for tuberculosis had arrested, and instituted a suit against, Dr. James E. Reeves, of Chattanooga, Tenn., on the charge of sending defamatory matter through the mails. The bill in the criminal suit was ignored by the grand jury, and the trial in the civil suit came off on the 11th instant. It required just ten minutes for the jury to render a verdict in favor of the defendant, Dr. Reeves. A similar suit against the editor of the Cincinnati *Lancet-Clinic* some time ago terminated in the same way. Both Dr. Reeves and Dr. Culbertson are to be congratulated upon the outcome of the suits, and are entitled to the gratitude of the medical profession, as well as the public, in thus successfully fighting one of the large number of quack-evils. It is not uninteresting to add that one of the partners in the "consumption-cure" died recently somewhere in the West of tuberculosis.

It is desirable that a full report of the trial, with the admirable charge to the jury of the presiding judge, should be published in pamphlet-form for distribution as a warning "to whom it may concern" and as a "stiffener of the moral backbone" of physicians in their fight with the nostrum-venders. For this purpose about $200 are required. THE MEDICAL NEWS requests subscriptions for the payment of the expenses of publication. We will undertake to acknowledge and forward to Dr. Reeves, to be applied to the purpose mentioned, any money sent in our care. One subscription of $10 has already been made. The subscriptions should be in amounts of fifty cents or over; and, when published, copies of the report will be forwarded to subscribers in proportion to the amounts subscribed.

Immediately following the prompt action of the United States Court at Chattanooga, Tenn., in the case of Amick *vs.* Reeves, the Amick Company applied to the Ohio Secretary of State for a reduction of the capital stock from $300,000 to $60,000, and of the face value of the shares from $1000 to $200. The law in Ohio makes stockholders liable for double the amount of their stock.

* * *

Wars and Rumors of Wars are heard as to the question of Code-revision, Code-abolition, nostrum-advertising, and the rest, at the coming meeting of the American Medical Association. The Cincinnati *Lancet-Clinic* suggests that "the Pennsylvanians" may leave the organization and affiliate with the Massachusetts State Medical Society if their "grievance" is not heard and satisfactorily settled. We are not authorized to speak for the Pennsylvanians, but we can assure the *Lancet-Clinic* that it need have no fear of such action. With some the wish may be father to the thought, but so long as the view of the Pennsylvanians is that of the vast majority of the members of the Association, it would naturally appear the limit of the ridiculous for them to surrender to a minority. Even if they become a minority, that would be no reason for secession.

As our esteemed contemporary justly observes, there can be no question as regards the duty of the trustees to carry out the instructions of the Association. A failure to do so constitutes the "grievance" of the Pennsylvanians, as well as that of many other States, indeed of the great majority of the entire membership. The attempt to befog the issue by clap-trap logic and secret decisions is simply childish and silly. The *Journal* of the Association must stop advertising nostrums or the decision of the Association must be reversed in proper legal and parliamentary form. There is no way out of this dilemma. The *Journal* says that the decisions of the Judicial Council in this matter, as well as in others, are not secret. But if not secret, why, in the name of all that is manly and frank and honest, does it not publish the full text of the decision in the case of *Pennsylvania* vs. *The Trustees?* It has been repeatedly urged to do so. Being the official organ of the Association, it is the proper medium for all official communications. What special reason exists for not publishing it? It should be done before, not after, the next meeting of the Association. It should have been done long ago. Why has it not been done? We beg for an explicit answer in the *Journal's* issue of May 4th.

* * *

Details of Management of Medical Congresses.—Apart from the scientific aspect a considerable part of the success of our large medical gatherings depends upon little business details often overlooked, upon a thorough planning in advance of course, and then upon an execution as painstaking. It would really be well to hire a person, if he could be obtained, whose business or executive function it should be to devote himself to the practical aspects or working mechanism of the meeting proposed. And this in a very prosaic and matter-of-fact way. For example, the value of a paper that is being read is sometimes lost to the hearers because of the continued entrance into the room of newcomers. This is especially true if the doorway is in front, instead of at the rear of the room. Why should a doorkeeper not be stationed without, to permit persons to enter only at the close of the reading? In default of a doorkeeper a signboard should be placed without the door stating what part of the program is being executed or what paper is being read. The writing pads whereon speakers in the discussion are to write their remarks should have a large and stiff backing, and should have printed headings stating the article discussed, the author, the name of the speaker, etc. One very important detail, often sadly neglected, is the necessity of pure air and ventilation. Those in the room forget it in their interest in the scientific program, and those on entering who at first are shocked by the foulness of the atmosphere soon become as somnolent and endure it as stoically as the others. No one wishes to speak first, and the atmosphere of the room finally becomes as filthily poisoned as that of a German lecture-room for lectures on hygiene or physiology. We positively know that audiences have sometimes been much smaller than they would have been if the room had been larger, and if it had been the duty of some one to look after the ventilation of it.

REVIEWS.

TRANSACTIONS OF THE AMERICAN PEDIATRIC SOCIETY. Sixth Session, held at Washington, D. C., May 29, 30, 31, and June 1, 1894. Edited by DILLON BROWN, M.D. New York: Bailey & Fairchild.

THE sixth session of this representative society brought out, as was to be expected, a number of valuable papers, which are here collected from their serial publication in several issues of the official organ, *The Archives of Pediatrics*. Notable among these articles are "Infantile Scurvy," by J. Henry Fruitnight; "The Filtration of Milk," by A. Seibert; "Tonsillotomy," by A. Caillé; "Pott's Disease," by Dillon Brown; "Cases of Acute Pyelitis in Infancy," by L. Emmett Holt; "Rickets in the Negro," by George N. Acker; and "Rickets among Neapolitan Children in America," by Irving M. Snow. The Society deserves credit for its efforts to correct and simplify the nomenclature of diseases of the mouth and those of the gastro-enteric tract in early childhood. The classification suggested by Drs. Rotch and Forchheimer for affections of the mouth is simple and quite satisfactory, and was adopted without question. The classification of gastro-enteric diseases, for which Drs. Rotch and Holt are responsible, is a decided advance upon the unmeaning and misleading nomenclature now current, though, as its framers admit, it is necessarily for the present provisional, and subject to future change. The volume is illustrated by reproductions of Townsend's case of congenital rickets and Northrup's cases of infantile myxedema; and its value to the general reader is still further enhanced by short abstracts of the discussions upon the more important papers.

A BOOK OF DETACHABLE DIET-LISTS FOR ALBUMINURIA, ANEMIA AND DEBILITY, CONSTIPATION, DIABETES, DIARRHEA, DYSPEPSIA, FEVERS, GOUT OR URIC-ACID DIATHESIS, OBESITY, TUBERCULOSIS, AND A SICK-ROOM DIETARY. Compiled by JEROME B. THOMAS, A.B., M.D., Visiting Physician to the Home for Friendless Women and Children and to the Newsboys' Home; Assistant Visiting Physician to the Kings County Hospital; Assistant Bacteriologist, Brooklyn Health Department. Philadelphia: W. B. Saunders, 1895.

THIS is a neatly bound and well-printed collection of detachable diet-lists for the several conditions named, together with a sick-room dietary. On each slip are given general rules for the special disease-condition, with a list of articles that may be permitted and those that are to be avoided. The sick-room dietary describes the mode of preparation of a large number of articles suitable for invalids of various kind. Altogether the publication constitutes a useful and convenient means of direction in the dietetic management of many cases that come under the care of the physician.

TRANSACTIONS OF THE MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA. Forty-first Annual Meeting held at Greensboro, N. C., May 15, 16, 17, 1894. Wilmington, N. C.: Jackson & Bell, 1894.

THIS volume, in addition to the minutes of the annual meeting, reports of committees, list of members and officers, the constitution of the Society, and the code of medical ethics, contains about a score of papers upon a wide range of subjects and of varying degree of merit. The Society is to be commended and encouraged in its good work.

SOCIETY PROCEEDINGS.

NEW YORK NEUROLOGICAL SOCIETY.

Stated Meeting held in the New York Academy of Medicine, April 2, 1895.

DR. EDWARD D. FISHER, President, in the Chair.

SARCOMA OF THE BRAIN: RESULT OF OPERATION.

DR. C. L. DANA presented a young man, twenty years old, who seven years ago received a blow on the left side of the head, in the neighborhood of the squamous suture. He was unconscious for a time, but soon recovered, and no immediate bad effects were noticed. Three years later he developed epileptic convulsions, which occurred about twice monthly, and were general in character. About two years ago it was first noticed that the convulsions were preceded by a sensory aura, and commenced in the fingers of the left hand, then involving the arm, leg, and face on the corresponding side, and finally becoming general. These attacks continued for over a year. He then presented a left hemiplegia involving especially the arm and to a less degree the leg and face. The paralysis was accompanied by various forms of anesthesia, by intense headache and marked double optic neuritis. There was also severe pain in the left arm, and the patient's condition was very distressing. A diagnosis of tumor of the brain affecting the centers for the left arm and fingers was made, and on opening the skull in that locality a flat, hard tumor was found lying just beneath the dura. Anteriorly it had infiltrated to some extent the cortical substance; posteriorly it was attached to the cortex, but there were small whitish spots underneath the pia, denoting some infiltration. It was found impossible to remove the growth in its entirety, and only about one-half was taken out. It proved to be a spindle-celled sarcoma.

Since the operation, which was performed in May, 1894, the improvement in the boy's condition has been very striking. For nearly six months after the operation he had no epileptic attacks at all; the pain and headache disappeared, as did also the optic neuritis. Immediately after the operation, the sensory disturbances seemed to be temporarily aggravated. At the present time there is only apparent a disturbance in the power of localization. The left arm has regained considerable power, and the fingers can be moved to some extent. During the past five months there has been about one epileptic attack each month, the movements being confined to the paralyzed side; they are not accompanied by loss of consciousness or the severe pain formerly present. Between the attacks the young man is perfectly well. Of course, the ultimate prognosis of the case is unfavorable, but the patient has had a year of comparative comfort and usefulness, and at present his condition is not growing worse. After the operation he was placed on arsenic, which was continued in moderate doses last summer. He has also taken some bromids. It appeared that the tumor developed from the dura.

Dr. W. H. Thomson read a paper entitled

CORTICAL REPRESENTATION OF SENSORY FUNCTIONS AND THEIR RELATIONS.

He stated that every marked advance in our knowledge of the structure of the nervous system is of great interest to the practical physician, because of its bearing upon the understanding of nervous function, as this in turn offers the only prospect for the correct interpretation of nervous derangements. In comparison with the histologic investigation of nervous tissue, the minute structure of any other tissue—even the most complex—is simplicity itself. No one, therefore, can appreciate better what recent progress in this respect amounts to than by noting at what a standstill investigators found themselves but four years ago, when all the most careful dissection and microscopic observation, so far as the gray matter was concerned, seemed to terminate in a totally unravellable maze of minute, interlacing threads, which, especially in the cerebral cortex, seemed to increase out of proportion to the cells, and in direct proportion to the presumable rise in grade of function. More recent investigations, however, and improved methods of staining, have carried us to a point where some conclusions seem well-nigh demonstrated which cannot but modify in more than one important respect our whole conception of nerve-function. These conclusions in brief, are:

1. That the anatomic unit of the nervous system is neither a ganglion nor a cell.

2. That a nerve-fiber is not simply a channel of transmission.

3. That the anatomic unit of the nervous system is a cell with its process or processes, and that cell and process constitute an anatomic entity which has no direct or anastomotic connection with other nervous cells or processes. All relations of this anatomic nervous unit with others are physiologic relations through proximity or contact, and not by fusion of fibers.

4. That the origin and seat of nervous function are not restricted to the cell, but rather are so far shared by its processes that it has been surmised that the cell has for its chief office to maintain the nutrition of the processes, and to influence the direction of, rather than solely to originate, function.

One of the chief deductions from these recent investigations seems to be a more definite conception of the plasticity of nervous matter. Instead of being confined within the exclusive and comparatively rigid limits of the nerve-cell, we seem to have a wide, active expanse of nervous matter and of nervous function reaching to the extremest peripheral distribution. Recent advances seem to emphasize the fact that recurrent afferent impressions, until they become habitual or normal, are the primary and constant sources of nervous organization, from the simplest to the highest examples of such organization. Experimental research certainly does not, at first sight, oblige us to go any higher than the spinal system proper to locate the whereabouts of sensation, whether of a general or of a special character. The headless body of a frog can be made to behave as if the head were still there. Detailed reference was made to the experiments of Vulpian, Steiner and Schrader on frogs, fishes and birds, and to those of Goltz on dogs. In one of the latter the entire cerebrum was removed and the animal survived for eighteen months. During this period the dog slept naturally, and could be awakened by loud noises or by handling; he was able to move about on three legs, and painful stimulation of the skin caused him to bark or growl. He would close his eyes when a bright light was thrown upon them, and ultimately learned to eat and drink when his nose was brought in contact with food. That he could also taste was shown by the fact that he invariably rejected food moistened with quinin. He also showed unmistakable signs of hunger and thirst.

In view of these experiments, Dr. Thomson said it certainly is difficult to deny that in the lower portions of the nervous axis, as compared with the cerebrum, we have all the conditions that have been supposed necessary to constitute true nervous centers of special function and action. We have undoubted manifestations of the existence of every variety of sensation, tactile, pain, muscular sense, vision, hearing, and taste. Moreover, from the extremely limited collections of gray matter in these parts of the nervous chain, compared with the great expanse of the cerebral cortex, the conception of limited collections of neurons subserving strictly definite functions, and, hence, properly termed nerve-centers, becomes here quite intelligible. This is further borne out by the consideration that their precedence in order and in time of development gives such a fixity to their organization that they become hereditary, a fact that can hardly be predicated of cortical functional areas. While, therefore, it cannot be denied that both experimental and clinical observation plainly demonstrate that certain areas of the cerebral cortex hold special relations both to sensation and to motion, certain facts show that those relations may be very different in kind from similar relations to those functions on the part of the lower centers.

First, as regards cerebral sensation from the functional side, it is evident that if a sensation has anything to do with a cerebral process it will have other elements in it than if it partook only of elements in the processes whose seat was in the ganglia of Goltz's dog. A cerebral process of sensation would almost certainly include a cerebral interpretation, so to speak, of the sensation, as well as the sensation itself, which latter has been propagated from the lower centers. By the influence of long habit, however, it would be very difficult so to analyze the cerebral act of sensation as to separate its cortical from its non-cortical elements. A sudden suspension, therefore, of cerebral sensation would involve so much loss of its habitual accompaniments as to appear at first to amount to complete suspension of sensation itself. A complete abolition of sensation, however, would be a permanent effect if sensation had its true seat in a cortical area. That it is not so in any case is Goltz's contention. All he asks is that enough time be allowed after any lesion in a cortical area to show that such a lesion, however extensive or complete, nevertheless does not abolish either sensation or motion.

On the other hand, recently ascertained anatomic facts about cortical growth show that its gray matter develops in a peculiar and suggestive manner. This is not by the multiplication in number of its cells, but by a progressive increase in the intercellular protoplasmic nervous dendrons or fibrils of those cells. This growth, in the extent and complexity of connections of the dendrons, both from apex, angles, and bases of the cells, causes those cells, which in intrauterine life lie so closely packed as to touch each other, to separate more and more widely, until in the adult the cells seem to have become relatively quite sparse. We find in this anatomic fact a strong presumption that the cerebral cortex grows in functional capacity by greater increase and elaboration of its nerve-matter, though not of its cellular elements. The question that now more particularly concerns us is whether by this development it is capable, also, of acquiring *new* functions. This question must certainly be answered in the affirmative, for the acquisition by certain cortical areas in man of such highly specialized functions as both sensory and motor speech, it must be remembered, also, only in one hemisphere, apparently determined in the first instance by the accident of the greater use of the right hand in gesture-language—this fact demonstrates conclusively that scarcely any cerebral function necessarily depends upon the special endowments of a particular area. The phenomena of word-blindness following a lesion of a special area in one hemisphere are certainly a demonstration of the plasticity, or rather educability, of cortical matter for wholly special functions, gained in this case, it must be noted, long after all other cerebral functions have become settled and organized. A similar special organization doubtless occurs later still in life in areas connected with the tactile sense in the blind, who learn to read by touching raised letters.

The bearing of these facts on the real relation of the central convolutions to sensation and to motion is obvious. When a child learns to use its hands or to walk, is it not thereby developing special cortical areas for sensation and for motion which may not originally have been endowed with special functions of that sort, just as it afterward educates certain areas of the left hemisphere to hear words, others to see words, and others to express words? Certainly, its attempts to learn to use its hands and feet require just as repeated, protracted, and laborious efforts as its subsequent efforts to learn speech, which latter end in particular modifications of its cerebral cortex. Indeed, the comparative clumsiness and weakness of the left arm may be said to be of the same origin as the hesitation in reading of one the area of whose left angular gyrus has only half-learned to spell, namely, from want of the same practice as that which has organized the right arm-center. Moreover, the organization of the central convolutions for sensation or for motion is plainly no more hereditary than the organization of the left centers for speech. In both cases these functions have to be acquired by the individual anew. The plasticity of the gray matter of the cortex for acquiring function by special modification of its substance, therefore, renders it doubtful whether these modified areas are ever exactly alike in any two persons. If so, we may speak of cortical areas or regions for this or that function, but not of cortical centers.

Dr. Thomson concluded his paper by inquiring whether any efferent activity, normal or abnormal, ever takes place without a corresponding afferent antecedent? This question is of special interest to the practical physician, in view of the phenomena of convulsive diseases. We hear of epilepsy, for example, as dependent in the first instance on an abnormal discharge of the motor cells of the cerebral cortex. Such language seems often to imply that these supposed cells become so charged with energy that they spontaneously explode and thus produce the convulsive paroxysm. Such a thing would be something enitrely new in the whole range of nervous phenomena, and the speaker said that he has long held that the true beginnings in all convulsive diseases are to be looked for not in the efferent but in the afferent limb of the nervous arc, and he has directed his search for remedial indications and measures on that hypothesis.

DR. B. SACHS said that it appeared to him that Dr. Thomson attached too much importance to the experiments that have been performed on the lower animals. The analogy between the lower animals and man should not be drawn too closely. There is a great difference between a dog and man: the former may be able to accomplish much without his cerebrum, while the latter can do very little if he is deprived of even a small portion of it. In the paper, reference was invariably made to sensory stimulation, or to a simple sensory impression as sensation, which is, after all, different from true sensation, into which the element of consciousness enters. Sensation, as applied to human beings, is not merely perception, but apperception. That epileptic seizures cannot occur without a cortex was disproved some years ago by Binswanger, who distinctly showed that while general tetanic contractions might occur in the body, with lesions in the medulla or even below that level, ordinary convulsive seizures never occur unless there is disease or irritation of the cortex.

Dr. Sachs expressed the opinion that the neuron represents the cell, its axis-cylinder process, and the terminations of the latter. This he regards as the true anatomic unit. Everyone is willing to admit that the brain of a child is a blank until sensory impressions are received, and that motor functions are the result of these. It is probable that we must sooner or later modify the conceptions we now entertain as regards cortical areas and their limitations. While the size of a certain area is, of course, of some importance, the immense number of cells present in each area must be taken into consideration. In the motor area for speech, for instance, a sufficient number of cells are present to accommodate the wants of the poorest speaker and the most fluent orator, the latter simply taking possession of so many more cells.

Dr. Sachs expressed his conviction that the motor and sensory areas in the cortex overlap to a certain extent. He was willing to suppose that all the motor centers are primarily sensory, and that there is an actual representation of various kinds of sensation in the cortex. He admitted that Dr. Thomson is probably correct in the assertion that the cortical centers are not so strictly limited as we suppose, but in the main we should base our deductions upon the experimental physiology that has been conducted through the surgeon's work in this field, and be guided by those results.

In regard to the patient shown by Dr. Dana, Dr. Sachs said that he has seen several cases in which the excision of cortical substance for epilepsy, cyst, or tumor, resulted in sensory disturbances that were recovered from within a few days—much more rapidly than the motor symptoms.

Dr. C. L. Dana said that he looked upon a sensation as the simplest of the conscious units; that is, that condition in which consciousness is aroused by the simplest form of stimulus. If, for example, the end of the finger is touched by some object, we get a simple sensation of contact, which is the simplest possible conscious unit in connection with that subject. If a white light is thrown into the eyes, we get a simple sensation of light. If we attempt to make sensation mean anything more than this, we are thrown at once into great confusion. If we shave off the motor cortex on both sides of the human brain, we produce cutaneous anesthesia, and then no kind of contact will arouse any sensation of a cutaneous character. We might get reflex acts, but they would not indicate that any sensation was present. The same doctrine probably holds true regarding the special senses of sight, smell, taste, and hearing.

As regards the limitations of the various cortical centers, there may be a certain amount of plasticity to the brain. For example, the visual center may not be absolutely localized in human beings, but the probabilities are that it is so nearly localized that, if we remove the occipital lobes in a child, it would grow up perfectly blind. Dr. Dana said that it appeared to him that the author of the paper had produced some confusion by introducing the term sensation into the psychology of lower animals. Lower animals may have sensation, and probably do; but if we are going to mix up the question of sensory functions with comparative psychology, we are likely to get very much tangled. We must carefully distinguish between true physiologic sensations and mere excito-reflex impulses. In connection with this subject the following case is of interest: A child was born at Bellevue Hospital, and lived for five days, during which time it cried when it was hungry or when it was pinched or roughly handled; it winked its eyes and showed certain manifestations of apparent intelligence. At the autopsy it was found that the cerebral hemispheres were absent; there were merely small fragments of the corpora striata and imperfect optic thalami. In that instance there were probably no genuine sensory impulses; the impulses were simply excito-reflex in character. Sensations, carefully defined and understood and rigidly separated, will probably be found to be conscious units that are localized in different parts of the cortical area. As regards the question whether motor cells in the cortex ever explode or discharge themselves without being first "touched off" by an afferent impulse, the speaker said he is quite ready to believe that that is possible, or even always the case.

Dr. William B. Pritchard said that, personally, he believes in the doctrine of cortical representation for common sensations, and furthermore, that the cortical regions in which these sensations are represented correspond very closely with what is known as the motor area. He had hoped that in the discussion some reference would be made to other sensory functions which are not included under the term of common sensations, but are more particularly related to the viscera, the heart, lungs, stomach, etc. These sensations have been variously styled as automatic or reflex in character, but he is of the opinion that they are distinct, conscious impressions, just as much so as are the sensations of touch, temperature, etc.

Dr. Joseph Collins said that to his mind the facts brought brought forward by Goltz and others who have experimented on the lower animals were not inimical to the contentions held by those who believe in the localization-theory. The movements of those animals, such as balancing, co-ordination, maintenance of equilibrium, and even the remarkable efforts of prehension can be explained on purely physiologic grounds, and do not have to be taken higher up into the realm of the sensorium than the medulla or perhaps one plane higher, at least caudad to the internal capsule, in order to understand them completely. He inquired of Dr. Thomson how he reconciled his conception of the primary and secondary neuron with his position in regard to the non-necessity of anything higher than the spinal cord for the possession or maintenance of the sensory and motor function, sensations, etc., referred to in the paper. In that case what functions does the primary neuron perform? Dr. Thomson attributes to the secondary neuron all the important phenomena that are ordinarily attributed to the cortex and its ramifications.

In regard to the concluding portion of the paper, Dr. Collins said he did not think that in epilepsy there is a surcharge of energy in the cortical cells, which explodes, but on the contrary, on account of their pathologic condition, the cells are unable to retain securely an amount of energy that they are able to hold in their physiologic condition, that is, they lose their tenacity and an explosion results.

Dr. E. D. Fisher said that the great difficulty in discussing this subject is to understand fully the difference between direct afferent impressions and true sensation. When we speak of sensation ordinarily, we mean the perception or appreciation of a certain thing by the person or animal. The speaker said he believes that animals have true sensations: the dog is not only able to appreciate pain; he is also able to appreciate comforts and discomforts. The sensation of pain must be received somewhere in the cortex; just how definite its localization is it is difficult to say. It seems to be necessary for the sensation to come from the external portion of the body, for irritation of the cortex itself does not give rise to pain. In its efferent or motor aspect the cortex responds whether the irritation comes from without or within. A scar on the finger may give rise to an epileptic seizure beginning in that finger; a similar attack may be induced by irritating the brain-center governing that region of the body.

Dr. Thomson stated that his idea in bringing up the subject as he did was to simplify it. If we begin at the cortex, we are confronted with the most complicated end of the problem; so it occurred to him to begin from below and go up toward the cortex, and then determine whether such a thing as sensation could properly be said to be found before we reach the cortex.

He agreed with Dr. Sachs that we must be careful about interpreting facts regarding the lower animals, such as dogs, and applying them to man; he certainly would be careful if he wanted to find out whether the dog had the same views as a man on politics or some similar subject, but when it comes to mere questions of intelligence, he saw no reason why an analogy should not be drawn between dogs and human beings. Many dogs seem to possess more intelligence than monkeys, and the latter are supposed to be very closely related to man. The results of Goltz's experiments are certainly very remarkable.

CORRESPONDENCE.

SPURIOUS PREGNANCY.

To the Editor of The Medical News,

Sir: The article on "Spurious Pregnancy," by Dr. Mitchell, in The Medical News of April 13th, explains a case of my own which was never entirely clear to me before. I was called to attend a case of confinement, supposed to be at term, and found all preparations made, including a full outfit of clothing for the expected child, and all the requisites for such an occasion carefully arranged under the supervision of a relative of the patient, who had some experience as a nurse. There had been cessation of menstruation and very decided enlargement of the abdomen. Some slight colicky pains having occurred, it was thought that labor had begun. As it turned out, however, there was not even pregnancy, and the woman has never borne children either before or since. As in the cases which Dr. Mitchell narrates, there was subsequent decrease in the size of the abdomen when it was found that pregnancy did not exist. I have no knowledge as to whether the patient was averse to bearing children or not.

Yours truly,

M. A. Veeder.

Lyons, N. Y.

NEWS ITEMS.

The Third International Congress of Dermatology is to be held in London, August 4 to 8, 1896. Mr. Jonathan Hutchinson is the *President;* Dr. Duhring, of Philadelphia; Dr. White, of Boston; Dr. Nevins Hyde, of Chicago; Dr. Bulkley, Dr. Keyes and Dr. Fox, of New York, *Vice-Presidents* from the United States; and Dr. F. Shepherd, of Montreal, and Dr. Graham, of Toronto, *Vice-Presidents* from Canada. Mr. Malcolm Morris is the *Treasurer;* Mr. J. J. Pringle, the *Secretary-General,* and Dr. George T. Jackson, of New York, *Secretary* for the United States.

All duly qualified medical men, British or foreign, or others interested in science invited by the Council, who shall have paid the fee of £1 (*a*) sterling, and who shall have enrolled themselves, shall be members of the Congress and entitled to the volume of *Transactions.*

The official languages of the Congress shall be English, French, and German; but with the permission of the President, members may express themselves in the language with which they are most familiar.

The proceedings of the Congress shall be embodied in a volume of *Transactions,* edited by the Executive Council.

Communications relative to membership, papers, or other matters connected with the Congress, should be addressed to the Secretary-General, Dr. J. J. Pringle, 23 Lower Seymour street, London, W., or to one of the Foreign Secretaries.

The fee for membership shall be payable in London at or before the opening of the Congress.

It will greatly facilitate the work of the executive if the fee is forwarded as soon as possible after the 1st of May, 1896.

Members who are unable to attend the Congress shall receive the volume of *Transactions.*

The subjects treated of shall be of two orders:

1. Those selected beforehand by the Executive Council and introduced by gentlemen chosen for that purpose by the Council.
2. Those selected by individual members themselves.

Subjects selected for debate by the Council shall take precedence over those selected by the members.

The sittings of the Congress shall take place from eleven in the forenoon to one in the afternoon, and from three to five in the afternoon, of each day.

There shall be clinical demonstrations of patients every morning from nine to half-past ten, and every afternoon from two to three.

Members contributing papers must submit an abstract of them to the Secretary-General on or before the 1st of May, 1896, which will be printed either in full or in part, and embodied in the general program of the Congress, which will be distributed at its opening.

At every debate precedence will be given to gentlemen who have communicated beforehand their intention to take part in it.

No papers lasting more than twenty minutes will be permitted. Speeches will be strictly limited to ten minutes each. MSS. of papers read must be left with the Secretary-General before the end of the sitting. The Executive Council shall decide as to the entire or partial publication of such papers in the *Transactions* of the Congress.

Meetings of State, National, and International Medical Societies:

	Meets.	Next meeting.
American Academy of Medicine.	May 4–6, 1895	Baltimore.
American Association of Genito-urinary Surgeons.	May 28–31, 1895	Niagara Falls, N. Y.
American Climatological Association.	June 13–15	Hot Springs, Va.
American Dermatological Association.	Sept. 17, 1895	Montreal, Can.
American Electro-Therapeutic Association.	Sept. 3, 1895	Toronto, Can.
American Gynecological Society.	May 28, 1895	Washington, D. C.
American Laryngological Association.	May, 1895	Rochester, N. Y.
American Medical Association.	May 7, 1895	Baltimore.
American Neurological Association.	June 5–7, 1895	Boston, Mass.
American Ophthalmological Society.	July 24, 1895	New London, Conn.
American Orthopedic Association.	Sept. 19–21, 1895	Chicago, Ill.
American Pediatric Society.	May 27–29, 1895	Hot Springs, Va.
Arkansas Medical Society.	May 1, 1895	Little Rock, Ark.
Army and Navy Medical Association.	May, 1895	Decatur, Ill.
Association of American Physicians.	May 28–31, 1895	Washington, D. C.
Association of Military Surgeons of the United States.	May 21–23, 1895	Buffalo, N. Y.
British Medical Association.	July 30–Aug. 2, 1895	London, England.
Canadian Medical Association.	Aug. 28–30, 1895	Kingston, Ont.
Colorado State Medical Society.	June 18–20, 1895	Denver, Col.
Connecticut Medical Society.	May 1, 1895	New Haven, Conn.
Idaho State Medical Society.	Sept. 9–11, 1895	Boise City, Id.
Illinois State Medical Society.	May 14–16, 1895	Springfield, Ill.
International Congress of Dermatology.	August 4–8, 1896	London, Eng.
International Congress of Gynecology & Obstetrics.	September, 1896	Geneva, Switzerland.
International Congress of Hydrobalneotherapy.	1895	Ostend.
International Medical Congress.	August, 1896	Moscow, Russia.
Kansas State Medical Society.	May 16, 17, 1895	Topeka, Kans.
Kentucky State Medical Society.	June 12–14 1895	Harrodsburg, Ky.
Louisiana State Medical Society.	May 7, 1895	New Orleans, La.
Maine Medical Association.	June 5, 1895	Portland, Me.
Massachusetts Medical Society.	June 11, 12, 1895	Boston, Mass.
Medical Society of Delaware.	June 11, 1895	Wilmington, Del.
Medical Society of the Missouri Valley.	March 21, 1895	Sioux City, Ia.
Medical Society of the State of New Jersey.	June 25, 26, 1895	Cape May, N. J.
Medical Society of the State of New York.	Jan. 28, 1896	Albany, N. Y.
Medical Society of the State of North Carolina.	May 14–16, 1895	Goldsboro', N. C.
Medical Society of the State of Pennsylvania.	May 21, 1895	Chambersburg, Pa.
Medical Society of Virginia.	October	Wytheville, Va.
Medical Society of West Virginia.	June 26–28, 1895	Davis, W. Va.
Michigan State Medical Society.	June 4, 1895	Bay City, Mich.
Mississippi State Medical Association.	April 10, 1895	Jackson, Miss.
Mississippi Valley Medical Association.	September	Detroit, Mich.
Missouri State Medical Association.	May 21, 1895	Hannibal, Mo.
National Association of Railway Surgeons.	May 1–3	Chicago, Ill.
Nebraska State Medical Society.	May, 1895	Grand Island, Neb.
New Hampshire Medical Society.	May 30, 31, 1895	Concord, N.H.
New Mexico Medical Society.	July 10, 1895	Las Vegas, N. M.
New York State Medical Association.	October 15–17	New York City
Ohio State Medical Society.	May 15–17, 1895	Columbus, O.
Ontario Medical Association.	June 5–6, 1895	Toronto, Ont.
Oregon State Medical Society	June, 1895	Portland, Ore.
Rhode Island Medical Society.	June 6, 1895	Providence, R. I.
Vermont State Medical Society.	October 10, 11	Burlington, Vt.
Washington State Medical Society.	May, 1895	Seatle, Wash.
Wisconsin State Medical Society	June 5–7, 1895	West Superior, Wis.

Meetings of Philadelphia Medical Societies:

	Meets.	Next meeting.
Academy of Surgery,	1st Monday of month, Oct.—June.	May 6
College of Physicians,	1st Wednesday of month, Sept.—June.	May 1
Section of Gynecology,	3d Thursday of month, Oct.—June.	May 16
Section of Ophthalmology,	3d Tuesday of month, Sept.—May.	May 21
Section of Orthopedic Surgery,	3d Friday of month, Oct.—April.	Oct. 18
Section of Otology,	1st Tuesday of month, Oct.—May.	May 7
Section of Surgery,	2d Friday of month, Oct.—May.	May 10
County Medical Society,	2d and 4th Wednesdays of month, Sept.—June.	May 8
Neurological Society,	4th Monday of month, Oct.—April.	Oct. 28
Obstetrical Society,	1st Thursday of month, Sept.—June.	May 2
Pathological Society,	2d and 4th Thursdays of month, Sept.—June.	May 9

The Samaritan Hospital for Women, Montreal, was opened by Her Excellency the Countess of Aberdeen, wife of the Governor General of Canada, on January 17, 1895. It is non-sectarian, and supported entirely by voluntary contributions, of which latter enough were handed in during the first month to carry on the work during a whole year. It is the only special hospital for diseases of women in Montreal, and will be moulded on the pattern of the New York State Women's Hospital in New York City. It is managed by a board of thirty of the principal ladies of the city, assisted by an advisory board of three laymen and three physicians. The staff consists of Sir James Grant, M.D., K.C.M.G., consulting physician; William H. Hingston, M.D., LL.D., consulting surgeon; A. Lapthorn Smith, B.A., M.D., M.R.C.S. England, surgeon-in-chief; H. Lionel Reddy, C.M., M.D., surgeon; S. F. Wilson, C.M., M.D., assistant surgeon and registrar; Dr. Sylvester, assistant surgeon; and Dr. Letellier de St. Just, assistant surgeon. An anesthetist and a pathologist will be appointed shortly. The outdoor service is attended to by the assistant surgeons from 4 to 5 P.M. every day, at which hour the surgeon-in-chief makes his daily visit and the most urgent cases are admitted. The hospital is absolutely free to women who are poor and sick, and who are residents of the city. Patients outside of the city will be admitted on payment of a nominal charge. The operation-days are Thursdays and Fridays at 10.30 A.M., when physicians who have not been attending infectious diseases will receive a hearty welcome. The hospital is situated in the choicest and healthiest part of the city.

Charcot Memorial Fund.—The following is a statement of the contributions to the Charcot Memorial Fund to date:

Previously acknowledged	$642 00
Dr. E. B. Fry, St. Louis	5 00
" J. D. Hirschfelder, San Francisco	10 00
" E. H Howard, Rochester	10 00
" E. E. Potter, "	10 00
" John D. Roe, "	5 00
" E. B. Angell, "	10 00
" George L. Walton, Boston	5 00
" Shattuck, "	20 00
" George B. Shattuck, "	10 00
" R. D. Edes, "	3 00
" Walter Channing, "	5 00
" H. B. Howard, "	3 00
" J. B. Ayer, "	5 00
" F. B. Greenough, "	12 00
" J. J. Putnam, "	5 00
" Morton Prince, "	25 00
" H. P. Bowditch, "	5 00
" S. T. Armstrong, New York	5 00
" H. Knapp, "	5 00
" Graeme Hammond, "	10 00
" Frank Hallock, Conn.	3 00
Total	$813 00

Owing to an oversight, the names of the following contributors, through members of the committee, were not given for publication:

Through Dr. T. Diller, of Pittsburg—Drs. S. Ayers, J. W. Dixon, J. A. Lippincott, W. A. Daly, A. Fleming, F. Lemoyne, R. M. Tindle, and J. S. Lange, each $5. Drs. G. G. Rehauser, C. C. Hersman, J. D. Thomas, D. C. Boyce, D. N. Rankin, J. D. Crombie, D. P. Miller, W. T. Burleigh, J. Milton Duff, W. H. Mercur, W. T. English, S. O. Brumbaugh, J. M. Brockerhoff, C. H. Voight, X. O. Werder, M. N. Gerhard, each $1. Dr. T. Diller, $2.

Through Dr. J. W. Putnam, of Buffalo—Drs. Charles S. Jones and William C. Krauss, each $5.

Through Dr. James Stewart, of Montreal—Drs. William Hingston, E. P. Lachelle, and James Stewart, each $5. Dr. J. P. Pottot, $4.

The fund will be forwarded to Paris without delay.

Medical Legislation in Minnesota.—The legislature just adjourned has dealt generously with the medical profession of Minnesota. The Medical Department of the State University received $40,000 for a laboratory-building, making a total of $150,000, appropriated for buildings alone in a period of four years. The medical law was likewise amended to require of all graduates of later date than 1898 "attendance upon four courses of medical lectures, in different years, of not less than six months' duration each." The provisions of this amendment will, therefore, exclude from practice in Minnesota alumni of all schools matriculating students the coming session under the provisions of the three years' curricula. The minimum provisions of the old act required attendance upon "three courses of six months' duration each." Thirteen years of medical legislation in Minnesota have reduced the proportion of physicians to the inhabitants fully seventy-five per cent.

Rufus C. Hartranft, an expert in handwriting, is desirous of making a special study of the writing of the insane. For this purpose he hopes to receive from physicians the loan of documents, letters, etc., written by those suffering from different degrees of insanity, accompanied with information as to the nature and deviation of the malady. In return Mr. Hartranft offers to forward to those who aid him a complete report of the results of his investigations, with drawings, diagrams, etc. Mr. Hartranft's address is No. 727 Sansom street, Philadelphia.

College of Physicians and Surgeons of Chicago.—Dr. Bayard Holmes has resumed the position of Secretary and Dean in the College of Physicians and Surgeons of Chicago, formerly occupied by him with such ability and credit.

Dr. C. W. Burr has been elected professor of neurology in the Philadelphia Polyclinic.

BOOKS AND PAMPHLETS RECEIVED.

Lehmann's Medicinische Handatlanen. Band VII. Atlas und Grundriss der Ophthalmoskopie und Ophthalmoskopischen Diagnostik. Mit 5 Text und 102 Farbigen Abbildungen Auf 64 Tafeln. Von Dr. O. Haab. München, Verlag: Von J. F. Lehmann, 1895.

Handbuch der Physiologischen Optik. Von H. Helmholtz. Hamburg und Leipzig: Leopold Voss, 1894.

The Relation of the Static Disturbances of the Abdominal Viscera to Displacements of the Pelvic Organs. By J. H. Kellogg, M.D. Reprinted from the Proceedings of the International Gynecological Congress, Brussels, Belgium, 1892. Battle Creek, Mich.: Modern Medicine, Publishing Co., 1894.

Position in the Treatment of Elbow-joint Fractures. By H. L. Smith, M.D. Reprinted from the Boston Medical and Surgical Journal, 1894.

A Vesical Detrusor Center in the Cerebral Peduncles. By Isaac Ott, M.D. Pamphlet. Philadelphia.

The Effects of Various Metals on the Growth of Certain Bacteria. By Meade Bolton, M.D. Reprinted from the International Medical Magazine, 1894.

The Use of the Resorcin-test for the Detection and Quantitative Estimation of the Free Hydrochloric Acid of the Gastric Juice. By Julius Friedenwald, A.B., M.D. Reprinted from the Medical Record, 1894.

U. S. Department of Agriculture, Bureau of Animal Industry. Farmers' Bulletin, No. 24. Hog-cholera and Swine-plague. By D. E. Salmon, D.V.M. Washington: Government Printing Office, 1894.

The Commercialization of Medicine: or, The Physician as Tradesman. A Sociological Study. By Theodore W. Schaefer, M.D. Reprinted from the Boston Medical and Surgical Journal, 1894.

Surgical Treatment of Tumors of the Neck. By Thomas H. Manley, M.D. Reprinted from the Medical Brief, 1894.

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ORIGINAL ARTICLES.

RATIONAL THERAPY OF ALCOHOLISM: A CLINICAL STUDY.

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EX-HOUSE PHYSICIAN OF THE BELLEVUE HOSPITAL, NEW YORK CITY.

ALCOHOLISM is a collective term embracing primarily various toxic phenomena called forth by the excessive, irregular, and long-continued use of alcohols, resulting either acutely in death or, at a later period, in grave secondary changes, seriously compromising the functions of the most vital organs of the body and doing irreparable damage to its tissues.

Taken with due consideration, at the proper time, in proper strength, and in fairly moderate quantity, alcohol in the form of light, dry wine acts not merely as a gentle stimulant to cerebration and digestion, but also—and this is of the highest importance in the treatment of exhausting fevers—as a food, offering through its own oxidation a valuable substitute, which, being destroyed in the body, generates during this combustion an estimable amount of force, reducing thereby in an appreciable manner the consumption of organized tissues held in reserve, to be immediately turned into energy when called for, retarding in this way retrograde metamorphosis, and restraining to some extent the otherwise too rapid evolution of nitrogen. Being only too acceptable to the palate, it is readily assimilated, and soon manifests itself in the production of the peculiar fascinating effect on the cerebral faculties, by dispelling gloomy thoughts and weakness, rousing in the excited brain latent and amorous feelings, and imparting to the individual new mental and physical strength, painting at the same time the future in its gayest colors. Under such conditions alcohol proves of benefit to the entire system by promoting nutrition and checking waste; but entirely the opposite obtains when imbibed indiscriminately—a primary evanescent stimulation rapidly superseded by a secondary but lasting depression, ending in a state of more or less complete narcosis. Considered in such a light, alcohol is absolutely harmful and detrimental to the normal state of health, and its use constitutes a pernicious and obnoxious habit.

For the sake of convenience and clearness in discussion, the subject of alcoholism may be divided into various stages: acute, subacute, chronic, and periodic. The first three are linked together; the fourth is entirely separate, and should be regarded as a form of insanity—a monomania. The discussion of the habit itself is excluded from consideration in this paper, being a subject thoroughly exhausted. I shall, however, attempt to emphasize a few details based on careful observation of the abundant material at my disposal while in charge of the alcoholic pavilion of Bellevue Hospital.

Acute alcoholism must be regarded as a form of acute toxic poisoning demanding, as such, immediate attention to promote rapid elimination or annihilation of the substance inducing this toxemia, for death is by no means so rare a termination as is generally supposed. Statistics on this subject are totally inconsistent and of but little practical value, for in the majority of instances the family physician yields to the entreaties of the friends, and substitutes *the results* without specifying the cause, hiding the latter under the cover of myocarditis and chronic nephritis, thus sparing the feelings of distressed relatives.

We have to deal with two classes of cases, one showing the ordinary type of profound intoxication, resulting from a gradual imbibition of more or less diluted liquors, the other representing strikingly the phenomena of sudden cardiac collapse due to the swallowing of an enormous quantity of raw spirits in a very brief space of time. This type is most dangerous and tends in the majority of cases toward a fatal issue. The patient usually falls to the ground, gasping for breath, is blue in the face, losing consciousness almost immediately; the pulse is rapid, irregular, and rather high in tension. Death may occur from inhibition of the heart's action before assistance is possible; usually, however, it is delayed for several hours. The countenance becomes pale, the eyes lose their expression, the pupils are widely dilated and but slowly respond to light, the respirations are shallow and rapid; the pulse now loses in volume and becomes rapid, feeble, and irregular, clammy perspiration starts on the forehead, the skin is cool, and if medical aid is not at hand the patient dies. In such a case immediate stimulation is imperative; before resorting to the stomach-tube one should administer a hypodermic injection of

Nitroglycerin	gr. $\frac{1}{50}$
Atropin	gr. $\frac{1}{100}$
Tincture of digitalis	♏ x.

Or,

Aromatic spirit of ammonia . .	ʒss.

The exhibition of ether or alcohol is, if possible, to be avoided; then, while an assistant loosens the clothing around the neck, the stomach-tube is inserted into the mouth, held open by a gag, cork, or bandage. Unfortunately the teeth may be tightly pressed together, defying any attempts at separation. No time is to be wasted, and the tube should be passed through one of the nostrils and carefully manipulated by a rotary movement backward into the esophagus and stomach. The ordinary gastric siphon of red rubber and a funnel are preferable to the pump, and the tube enters the nose, if well oiled or dipped in glycerol, without much trouble. Light pressure over the epigastrium suffices usually to start the flow of fluid, which should be exhausted as much as possible before water is introduced. This may become necessary when the fluid ceases to come, as a result either of obstruction of the tube by particles of food or of occlusion of the holes by a sucking inward of the gastric mucous membrane. When the stomach is thought to be empty it is washed out with several pints of lukewarm water, to remove any traces of alcohol. Then four ounces of warm milk, mixed with an equal quantity of sweet-oil and half a dram of sodium chlorid, are injected into the stomach, acting as a mild laxative and protecting at the same time the mucous membrane, and discouraging further absorption of any toxic products in the lower bowels. An enema of glycerol, ℥ij, ox-gall, ℥j, will be found useful. We avoid unnecessary exposure and excitement, for here we are confronted by a depression both of the nervous and vascular systems—in other words, a condition of shock. We maintain and equalize temperature by applying a hot pack, which may be removed in from thirty to forty minutes. An hour after the first hypodermic injection another of glonoin, gr. $\frac{1}{50}$, strychnin sulphate, gr. $\frac{1}{30}$, is to be given, and repeated, if necessary, three hours later. In the interval between the two, aromatic spirit of ammonia, ♏ xx–xxx, administered subcutaneously, successfully sustains the cardiac energy till the strychnin has been absorbed in sufficient quantity to restore permanently to the exhausted heart its natural muscular tone. In the course of two or three hours a change for the better or worse may be expected; if a fatal termination threatens, phenomena are very self-evident, death occurring either from gradual cerebral exhaustion or slow failure of heart-power, accompanied by pulmonary edema. A hopeful issue may with some certainty be predicted when the pulse becomes more regular, less rapid, and increases in force with a proportional diminution in the frequency of the respirations and an augmentation in the depth of the individual acts. The countenance, too, deadly pale at first, assumes a more natural hue, the corneal reflex returns, and the pupils, widely dilated primarily, soon regain their natural size. However promising the case, it is wise to be guarded as to the possible outcome, for not infrequently are patients, already considered convalescent, carried off by a suddenly developing pneumonia or acute bronchitis. When the dangers of circulatory failure have been successfully combated and the heart is under control, deep sleep will ensue, from which the patient should not be roused, but allowed to pass on to an uneventful recovery. The after-treatment will be taken up in the consideration of the subacute variety.

The congestive type differs widely from the anemic variety, being far slower in onset, and the impression produced on the nerve-centers is, consequently, much less pronounced. When the narcotic stage is reached subsequent to a comparatively short period of boisterous delirium, the countenance will be found deeply flushed, cyanotic; the veins prominently exposed and turgid; the pupils widely dilated; respiration laden with the fumes of alcohol, quite deep, at times stertorous; the pulse at first rapid, full, and bounding, then slow and intermitting, finally rapid, feeble, and irregular, betokening impending heart-failure. The temperature, as in the anemic type, is apt to be subnormal, especially if the individual is not accustomed to the use of alcohol or has been exposed to cold; in the latter instance sometimes falling below 96°. In one case the thermometer registered 92.8° F. on admission. Little or no deviation from the normal is found in the alcoholic toxemia of the habitual drunkard. Narcosis, as a general rule, is rarely so profound that active irritation is not followed by response; particularly a sharp rap on the soles of the feet evokes almost immediately a groan; this is a procedure much in vogue amongst the police force, though not entirely devoid of danger.

Immediate lavage with lukewarm water should be attempted, and afterward there should be introduced by a tube a pint of water containing an ounce of Rochelle or Epsom salt; catharsis may be hastened by an enema. A cool plunge-bath, or, better, a warm sponge-bath with an icecap to the head, followed by thorough massage and a hot pack, re-establishes the cutaneous circulation and induces free diaphoresis. Catheterization is rarely called for; generally we meet with relaxation of both rectal and vesical sphincters. Should the patient not be able to swallow, and constipation prove an obstinate feature, recourse may be had to the subcutaneous administration of magnesium sulphate in the form of a concentrated aqueous solution, gr. x–xx as a dose. Out of ninety-five cases subjected to this treatment 14 per cent. promptly and satisfactorily responded by profuse evacuations; with the rest there was little or no effect. Hydragogues or drastic cathartics, such as elaterium and croton-oil, should be avoided on account of the intense depression following; they are absolutely harmful in the anemic type. Free emesis should be encouraged if the gastric siphon is not applicable, either by tickling the fauces or by warm salt-water or mustard-water, or the careful exhibition of apomorphin, the most reliable emetic at our command; it must be employed with circumspection and in moderate doses. In four cases alarming signs of prostration were witnessed after subcutaneous injection of $\frac{1}{20}$ of a grain; this may be obviated by combination with the tincture of digitalis.

Convulsions are not uncommon in this type, and may lead to a fatal termination. They are, in the majority of instances, induced by a passive hyperemia of the cortex, resulting from cerebral edema, with a concomitant increase of the ventricular fluid, frequently associated with minute petechial hemorrhages on the pia and localized thickening of the membrane; in other cases lesions assume a more definite character and present themselves in the shape of isolated patches of the new-formed connective tissue, highly vascular, often the seat of minor hemorrhages, recognized pathologically as chronic internal hemorrhagic pachymeningitis, a condition almost pathognomonic of chronic alcoholism, and giving rise to repeated attacks of irregular palsies and monoplegias of variable duration. As convulsion signifies an over-excitation of the central nervous system, a sedative would seem to be specially indicated. One may then administer at once, subcutaneously, morphin, gr. $\frac{1}{4}$–$\frac{1}{3}$, omitting the atropin, and gr. xx of chloral, and gr. xxx of potassium bromid dissolved in ℥ij of warm water, by the rectum. Croton-oil, gtt. ij–iij, or elaterin, gr. $\frac{1}{8}$, may be given by the mouth, to produce free watery stools, extracting fluid constituents from the blood and lessening cerebral congestion.

Should syncope threaten at any time stimulants must be exhibited. Holding a piece of cotton saturated with aqua ammoniæ, or a few drops of amyl nitrite, under the nose often aids in rousing the patient at this stage. In this type both the cerebral and circulatory systems are well balanced; hence, sudden depression is not to be feared. Treatment, therefore, may be more rigorous than stimulating. The personal appearance of the individual may also aid us, for, generally speaking, the extremes of age, the weak and debilitated, particularly tuberculous patients whose bodies have been drained of their vital elements, and those unfortunates who, addicted to one habit, resort to this to drown their sorrow, are by far more liable to go into collapse—*i. e.*, assume the anemic type, than the rough and strong, whose nervous system is less sensitively organized, and, consequently, not so easily depressed. After the acute symptoms have subsided the management becomes practically the same as that of the next type under consideration, namely, the subacute variety.

Here we have to deal unquestionably with a well-established habit; the individual has experienced the craving for liquor, and long since become addicted to its use; it has ceased to be a luxury; it is to him one of the necessities of life, and rather would he forego his food than be without the stimulant; he must have it, and nothing but alcohol will gratify his desire. Satisfied with the ordinary amount at first, the time soon arrives when the patient is compelled to increase the moderate allowance, in order to secure the same effects as formerly. On retiring at night the overtaxed brain finds no rest, the man is strangely excited and restless; a hot toddy does away with this torture, and a deep sleep falls over the weary eyes; in the morning he awakens with a dull, boring headache, feels very much out of sorts and sick at his stomach, and, naturally, the bottle is called upon, its contents affording considerable relief; exhaustion makes way for a buoyancy of spirits entirely new to him. He is able to consume a good breakfast with a very fair appetite. This state of affairs may continue for an indefinite period; but generally, little by little, the daily ration has to be increased and multiplied, till finally enormous quantities barely suffice to gratify the wants of a confirmed alcoholic. Should the individual at this stage be taken ill with acute disease of any form utter prostration would carry him off immediately, unless alcohol be supplied in sufficient quantity to meet the demand made on the tissues, so long accustomed to the drug that, were this discontinued, serious embarrassment of innervation would inevitably result, intensified as it is by the presence of an acute disease and partial disorganization of the nerve-centers and threatening delirium tremens.

Complete abstention is still advocated by some theorists, even under these conditions; but they are greatly outdistanced by an overwhelming majority, who, by a careful exhibition of the proper amount of stimulants, achieve most brilliant success, particularly in acute lobar pneumonia befalling a chronic alcoholic, with threatening explosions of nervous phenomena; here alcohol effectually controls cerebral hyperesthesia, supports the heart, maintains nutrition, and reduces temperature.

The prime factor in the treatment of this stage resolves itself into immediate restriction of the injurious liquid, prohibiting the use of raw spirits, and substituting, if necessary, those of a milder kind. We should absolutely condemn the pernicious practice of drinking before meals to stimulate an appetite, since at that period the stomach is empty, and the alcohol certain to be absorbed exerting a most deleterious influence on the exposed gastric and hepatic tissues. We are not to be too hasty in reducing the amount of stimulants, as a sudden withdrawal not infrequently precipitates an attack of delirium tremens. The time when alcohol is most craved is early in the morning before breakfast, when the stomach, irritated by an accumulation of thick, ropy mucus, rebels and tries to rid itself of its nasty contents. Almost invariably we find a catarrhal pharyngitis, the viscid mucus closely adherent to the vault of the pharynx, causing an intolerable tickling in the throat and inducing violent fits of coughing, which, by reflex action, produce sharp spasms of the diaphragm, ending in distressing spells of vomiting, by means of which the mucus is finally expelled. This morning-sickness, perfect torture to the patient, occurs promptly every day, usually on getting up from bed, and indicates a catarrhal condition of the gastro-intestinal tract. There is no agent in the whole pharmacopeia capable of displacing or superseding the ordinary gastric siphon. The relief afforded by that simple contrivance is sometimes marvellous. Lavage in such cases is daily rising in favor, and deservedly so; it thoroughly cleans the stomach, restores tone to the flaccid walls, checks the production of unhealthy mucus, and stimulates the glands to an increased secretion. The patient easily acquires the technique when shown several times, and can pass the tube himself without much inconvenience. In order to be successful, lavage should be performed at first daily for a week one hour before the midday meal, which by preference ought to be the heaviest, followed by a light supper at night. Warm water containing sodium bicarbonate in the proportion of ʒij to the pint will be most serviceable. Should there be an appreciable deficiency in free hydrochloric acid in the gastric juice, ʒj of the diluted acid is to be added to the pint of water, and is followed at times by the happiest results. Let the irrigation be continued till the water returns clear and fairly free from mucus. If the patient is naturally costive, ℥ss of Rochelle or Epsom salt dissolved in half-a-pint of lukewarm water may be left behind, insuring free catharsis, of undoubted benefit after a debauch, lessening through its revulsive effect the throbbing headache resulting from passive congestion of the brain. Calomel in the form of tablet-triturates, gr. $\frac{1}{10}$ every ten minutes till gr. iij are taken, is an excellent means of clearing the enteric tract. It should be followed by a saline the next morning, which greatly adds to its effects, lessens griping, and expels any traces left behind.

An hour or two after lavage an intestinal antiseptic should be administered, such as gr. v of salol, naphthalin, salophen, or ♏x of oil of wintergreen or peppermint. Most efficient is the following:

Sodiumsalicylate	gr. xv.
Sodium bicarbonate . . .	gr. x.
Tincture of capsicum . . .	♏x.
Peppermint-water . . q. s. ad	f℥ss.—M.

One dose. Repeat once in four hours.

This is very successful when taken in anticipation, preventing fermentation and intolerable sick headache. We should encourage the liberal use of mineral and other waters, and tone up digestion with

Tincture of capsicum . . .	♏xx.
Compound tincture of cinchona .	ʒss.
Tincture of nux vomica . .	♏vj.
Peppermint-water . . q. s. ad	fʒij.—M.

One dose, to be taken in water every four hours, ten minutes before meals.

The diet should be regulated, and for three days following the debauch should consist of milk, milk-toast, beef-tea, chicken-soup, then of eggs, oysters, fish, etc., gradually approaching a general diet rich in vegetables and fruits, especially apples, lemons, and oranges. Frequently patients complain of acid regurgitation of fluids shortly after meals. This is easily remedied by gr. xx of sodium bicarbonate before eating; at times, however, the acid itself is deficient in quantity, and it should then be reinforced, best by the administration of nitrohydrochloric acid, given with meals—from ♏x to xv of the diluted acid in a wineglassful of water. This not alone supplies an acid, but also aids digestion by exerting a stimulating influence on the liver. Later on, with the stomach in fair condition, sodium bicarbonate gr. v, before meals, sometimes is sufficient to stimulate an increased flow of acid. If on examination the patient proves to be of a bilious temperament, subject to attacks of dyspepsia, the careful use of calomel in small doses in triturate-form is often very beneficial, gr. $\frac{1}{4}$ three times daily for four days, but not longer, otherwise unpleasant salivation will occur, a large dose being less dangerous in that respect than a small one often repeated; but it is also less efficient. Unless there is an idiosyncrasy toward the drug the result will be most gratifying to the patient; it produces mild catharsis, an increased flow of bile, and unloads the pelvic viscera, usually in a state of chronic passive congestion. On the morning of the fourth day a full dose of salts before breakfast adds to its effects. The bowels must be kept open, and the process should be free and easy—one movement, at least, a day. A teaspoonful every three or four hours of the ordinary rhubarb and sodium bicarbonate mixture usually accomplishes this purpose. After the acute phenomena have been ameliorated tonic treatment must be continued, improving the general condition by free outdoor exercise and nutritious food. Strict regulation of hours and habits is imperative.

Any tendency toward insomnia must be corrected by a timely and cautious use of hypnotics, as, *e. g.*, gr. xx of sulphonal or trional. Sulphonal is not reliable, as it not infrequently produces its characteristic effects the night following. Trional has a better reputation, and, to my knowledge, is devoid of danger. Like sulphonal, it soon loses in power, and the dose has to be increased; it is specially applicable to uncomplicated cases without marked nervous manifestations. Sometimes the newer antipyretics may be employed with some benefit: doses of gr. x of lactophenin, phenacetin, antifebrin, or antipyrin. Like sulphonal and trional, they are not suitable for continual use, but good results can be obtained by judicious variation. These drugs are best administered from one-half to one hour before bedtime, placed dry on the tongue, taking a glass of hot water to which a little capsicum has been added after it; this in itself in some cases was followed by sleep. The most satisfactory agents are chloral, with its derivatives, and the bromids. Chloral has a great reputation, and deserves it, only it must be exhibited with care. It is contraindicated in old alcoholics with fatty heart and in cases with great mental excitement. Here the bromid effectually takes its place. Chloral, from its pungent taste, is not a favorite, though given dissolved in ice-water to which some essence of wintergreen has been added, it is quite acceptable; the dose has to be increased to tolerance for continuous effect. Butyl or croton chloral hydrate gr. x, and chloralamid from gr. xv to xx, are very serviceable at times. The bromids, however, are of the highest importance, and rank first in those cases of alcoholism in which the nervous element predominates. The potassium salts are considered most efficient, and yield excellent results in combination with sodium and strontium bromids; they are easily taken in effervescent mineral water or in peppermint-water. A useful mixture is the following:

℞.—Potassium bromid }
Sodium bromid } . . āā gr. xx.
Chloral . . . . . . gr. x.
Ext. erythroxyl. (coca) sufficient to make fʒj.
Sig.—To be taken at night in peppermint-water.

Or for general sedative influence:

℞.—Potassium bromid . . . . ℥ss.
Chloral . . . . . . ʒij.
Tincture of digitalis . . . fʒj.
Peppermint-water . . q. s. ad f℥iv.
Sig.—ʒj thrice daily after meals.

Paraldehyd, from fʒss to f℥ss, is an excellent hypnotic, but is crowded out of the ordinary formulary owing to its exceedingly nasty taste and repulsive odor. Hyoscyamus in the form of the tincture, fʒss to fʒij at a dose, is very satisfactory in combination with other drugs; its alkaloid, hyoscyamin, possessing undoubted advantages, is widely used in doses varying from gr. $\frac{1}{100}$ to $\frac{1}{20}$ combined with from gr. $\frac{1}{12}$ to $\frac{1}{8}$ of morphin. Hyoscin, owing to its uncertainty in action and depressing influence, is rarely used, the dose being from $\frac{1}{100}$ to $\frac{1}{50}$ of a grain. In opium we have an agent absolutely certain in its effects, but highly dangerous when used indiscriminately Five cases of chronic opium-habit have come under my observation, brought about by careless treatment with opium during the course of a supposed cure for alcoholism. It is not wise to employ opium in any form for the ordinary insomnia, from the ease with which the habit is incurred. In the wakefulness accompanying alcoholism bordering on delirium tremens, when sleep is our only hope, a full dose of opium is often invaluable; at times I have seen excellent results follow the administration of gr. $\frac{1}{10}$ of opium every ten minutes for two hours, producing refreshing sleep lasting from six to nine hours. A rapidly working combination is morphin from gr. $\frac{1}{6}$ to $\frac{1}{4}$, atropin gr. $\frac{1}{120}$, or, instead of the latter, hyoscyamin gr. $\frac{1}{50}$ given by subcutaneous injection.

Morning nausea is likely to be a prominent feature and quite persistent. In such cases the patient should be instructed to partake of some hot water, coffee, or tea early in the morning before assuming the upright posture; a glass of iced Vichy, seltzer, or other mineral water, or a Seidlitz powder, often gives relief to an irritable stomach; an active cathartic at night-time or a saline laxative half-an-hour before breakfast may be tried, frequently with success. An ice-bag to the epigastrium, or a hot cloth sprinkled with ʒj of oil of turpentine applied to the abdomen is sometimes efficient. Medicinal treatment is of more avail; gr. x of a bromid immediately before retiring or early in the morning, with some effervescent drink, every other day for a week, may effect a permanent cure. Cocain in doses of from gr. $\frac{1}{6}$ to gr. $\frac{1}{2}$ is generally very prompt, but in itself at times causes vomiting, owing to the disagreeable sensation resulting from anesthesia of the soft palate. There is, however, one great objection to its repeated employment, namely, the acquisition of the habit. The same holds good of morphin and its salts, which are undoubtedly very valuable. Usually, however, one or the other of the following agents accomplishes the object:

Tincture of nux vomica . . .	♏v.
Fowler's or Donovan's solution of arsenic	♏ss–j.
Dilute hydrocyanic acid . . .	♏iij–viij.
Hoffmann's anodyne . . .	♏xx.
Spirit of chloroform . . .	♏v.
Creosote	♏j.
Eucalyptol	♏ij.
Lime-water	fʒss–fʒj.
Aconitin	gr. $\frac{1}{300}$.
Or,	
Tincture of aconite	♏j.
Tincture of cimicifuga . . .	♏v.
Cerium oxalate, bismuth subnitrate, quinin dihydrochlorate, pepsin, charcoal, in doses varying from	gr. v–x.
Powdered ipecac	gr. $\frac{1}{8}$.
Or,	
Wine of ipecac	♏j–iij.
Tincture of capsicum, ginger, or cardamom	♏ij–v.

They all deserve a fair trial, either singly or in combination.

To reduce the morbid craving for alcohol nothing to my knowledge can supersede subcutaneous administration of large doses of strychnin nitrate. In order to fulfil this purpose it must be given as stated; otherwise the results will be very disappointing. When taken internally it merely exerts its tonic influence upon digestion and nutrition, and only hypodermically does it manifest in the highest degree its peculiar power over innervation. The following method I have found very serviceable after the more acute catarrhal phenomena have subsided. Here as anywhere else idiosyncrasy is liable to play us a trick, and it is therefore advisable to give to the patient a test-dose of gr. $\frac{1}{20}$ of strychnin nitrate; if well borne, the treatment may be commenced. The principal object is to make a profound impression on the nerve-centers within a short time, employing the maximum dose consistent with the safety of the patient. Alimentary support and good hygienic surroundings are necessary requirements. On the first day an injection is made into the right arm over the region of the deltoid of gr. $\frac{1}{5}$ at 9 A.M., and another at 5 P.M. into the left arm; on the second day, strychnin nitrate gr. $\frac{1}{10}$, hyoscyamin gr. $\frac{1}{120}$, at 9 A.M.; again at 5 P.M., omitting the latter; on the third day: strychnin nitrate gr. $\frac{1}{15}$ at 9 A.M., 1 and 5 P.M., with hyoscyamin gr. $\frac{1}{120}$ at 1 P.M.; on the fourth day: strychnin nitrate gr. $\frac{1}{20}$ at 9 A.M., 1 and 5 P.M.; on the fifth day: strychnin nitrate gr. $\frac{1}{25}$ at 9 A.M., 1 and 5 P.M.; on the sixth day: strychnin nitrate gr. $\frac{1}{30}$ at 9 A.M., 12 M., 3 and 6 P.M.; on the seventh day: strychnin nitrate gr. $\frac{1}{30}$ at 9 A.M., 1 and 5 P.M. We now discontinue all medication for one week, during which time the compound tincture of cinchona, or of gentian, from fʒss to fʒj, tincture of cimicifuga, ♏xx t. i. d. before meals, iron and arsenic will also be found very useful. We then resume the treatment, starting with strychnin nitrate gr. $\frac{1}{30}$ t. i. d., increasing to gr. $\frac{1}{20}$ t. i. d., and continue for one week; at this time there will be a noticeable change in the patient's condition, with marked improvement mentally and physically. It is well to watch the patient closely during the first week, so as not to overstep tolerance; the judicious combination of hyoscyamin, from gr. $\frac{1}{120}$ to $\frac{1}{100}$, will allay too strong nervous irritability. An occasional dose of potassium bromid at night will be of benefit.

Chronic alcoholic poisoning constitutes a disease, and the manifestations are but too self-evident. Treatment is of no avail so far as the disease itself is concerned, because we are dealing with a general connective-tissue sclerosis associated with serious vascular changes and fatty degeneration of the essential viscera. The iodids are said to have an affinity for sclerosed tissues, and should be tried, but with judgment, otherwise they may cause more damage than they do good by still more disarranging the already very irritable stomach. Combined with an alkali and administered in small doses in milk after meals, they are generally well borne. Mineral tonics with bitters are highly recommended for the cachexia. In all doses of aconite, ♏j every two hours, successfully relieve the throbbing headache resulting from a left ventricular hypertrophy induced by general endarteritis and cirrhotic kidneys. The same rules regarding regulation of habit and diet are applicable here; other treatment should be symptomatic. Strychnin may be useful, especially when there is an incipient neurosis caused by alcoholism. Insomnia is to be treated as before, avoiding the exhibition of chloral to an old alcoholic with a fatty heart. Amylene hydrate, from ♏xxx to lxx, and urethan, from ʒss to ʒij, are highly praised as not affecting either circulation or respiration.

Periodic alcoholism, dipsomania, more properly termed oinomania, is not to be confounded with habitual alcoholism, being not a habit but a monomania dependent on some pathologic lesion or defect in the brain. The clinical history of the individual cases strongly points toward the fact that it possibly has a close relation to epilepsy.

The condition is characterized by a rapid onset, the prodromal period lasting from one to three days, and a more or less protracted and intense paroxysm of maniacal excitement, associated with a mad desire for alcoholic stimulants taken in enormous quantities, terminating invariably in stuporous melancholia and profound depression, with suicidal intents and utter prostration, from which the patient gradually rallies. Heredity seems to play an important part, as is well demonstrated by three cases coming under my notice:

One was the son of an epileptic himself subject to that disease, with a beginning secondary dementia. The paroxysms, occurring about every three or four weeks, were ushered in by a convulsion lasting but a few minutes, followed by from two to four hours of profound sleep. According to the friends' statements, on awakening the patient would beg for whisky and consume considerable quantities without showing any signs of intoxication. He would act very queerly at times, usually displaying considerable intellect, contrasting strongly with the stupidity in the intervals between these seizures. On the evening of the third day he became very noisy and excitable, talking and mumbling incoherently, and finally fell into profound sleep, from which he awoke dull, stupid, and somewhat exhausted, evincing no desire for whisky.

The second case, not so well marked, gave an indefinite history on the mother's side, but stated that the father died from alcoholism.

The third case was that of a well-to-do planter, from the Bermudas, highly educated and of good social standing. His mother died in a private asylum for the insane; the father is also dead from a cause unknown, but he was a very moderate drinker. The patient himself was an abstainer, married, with two children, apparently free from defects, and attended to his business satisfactorily. About every three or four months he packed his travelling-bag, informing his family that business of a personal nature called him to New York; when he arrived he drank excessively for four or five days; during this time he was able to go about in a dazed manner, becoming violently excited when an attempt was made to cut off the alcoholic stimulants. On the fifth or sixth day he got drowsy and fell into a stupor, remaining thus for from sixteen to eighteen hours. On admission to the hospital he was comatose, presenting a yet recent wound from ear to ear crossing the larynx, proving that an unsuccessful attempt at suicide had been made, to which the patient confessed later on. During his first night in the hospital he tried to hang himself by means of a handkerchief tied to the bedpost; when told of this later on he indignantly denied it. Prostration was marked, and memory was much enfeebled. He began to recover rapidly under subcutaneous administration of strychnin, and was discharged two weeks later in fairly good physical and mental condition.

Nothing can be accomplished with this class of cases so far as home-treatment is concerned; they are proper subjects for a suitable hospital, where the patient rests entirely in the hands of a physician. Alcohol should be strictly withheld and powerful sedatives exhibited near the time of the expected attack. The strychnin-treatment should be carefully tried, perhaps in combination with morphin. Perfect cures are probably exceedingly rare, but considerable may be done in attending to a reasonable extent to the patient's wants, and above all to his bodily condition.

NORMAL AND SURGICAL ANATOMY OF THE VERMIFORM APPENDIX.[1]

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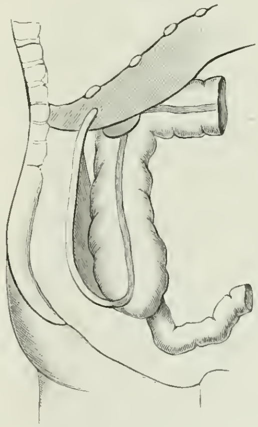
The results chronicled in this paper were drawn almost entirely from various post-mortem examinations and from practical work in the dissecting-room. The specimens are the more varied and peculiar of those prepared. Each consists of the cecum, a portion of the ileum and colon, the attached peritoneum, and the appendix. Measurements and other observations were first taken *in situ*. After removal a fresh specimen was soaked in warm water for a few hours, then in a one per cent. solution of mercuric chlorid for a day, and afterward immersed in glycerol. In this manner the bowel retains an elastic and natural state of preservation.

During development of the alimentary canal a diverticulum is noticed separating the small and large bowel in the region later occupied by the ileo-cecal valves. The lower part of this loop remains comparatively small; the proximal portion enlarges to form the dilated cecum, probably about the sixth week of fetal life. All this takes place on the left of the median line of the abdomen, but in the process of development gradually crosses over toward the liver. At the sixth month the cecum is found in its most frequent location in the right iliac fossa. This peculiar translation will account for the varied positions of the appendix in the abdominal cavity, because it may be arrested in the median line near the liver, or even extend into the pelvic cavity. Indeed, it is frequently found in close relation to the rectum, uterus, or bladder, without showing any signs of having been changed to an abnormal position by cicatricial tissue. Although six months is the average time for its descent, I once found the cecum high up behind the right hepatic lobe in an eight-months' fetus, although this is often more apparent than real on account of the enormous size of the liver.

Fig. 1.



In a case that developed pus, reported by Dr. H. A. McCallum, of London (The Medical News, December 17, 1892), the appendix was situated on and adherent to the upper surface of the liver. An eminent authority, Mr. Treves, of London, supposed that this condition has arisen from arrested descent of the large bowel. It may well be questioned how the appendix could possibly lie in such a position except in the foregoing manner, unless drawn upward by cicatricial tissues, or indeed if the liver were not enlarged or floated downward. This specimen (Fig. 1), however, will easily persuade you that such a condition may and does happen with a normally placed cecum, the appendix being very long and lying on the liver above the gall-bladder.

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[1] Read before the London Medical Society, October, 1894.

When the abdomen is incised the parietal layer of the peritoneum will be divided and the peritoneal cavity opened. If the omentum and intestines are pushed aside, the visceral layer can be traced upward from the pelvic organs to the right iliac fossa, approaching quite close to Poupart's ligament and covering the psoas and iliac muscles. On reaching the highest limit of the under surface of the cecum it bends forward and downward to cover its pouch-like blind extremity, and, meeting with the appendix, completely invests it to the tip as well as being reflected over the front of the cecum to cover the ascending colon where it is continuous with the parietal layer from the side of the abdominal wall.

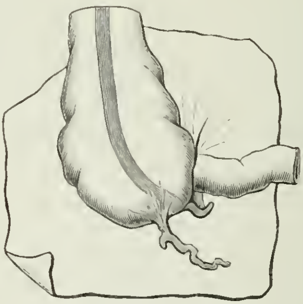
The cecum, then, is in nearly every case totally invested by peritoneum, lies quite loosely in its position, and is freely movable. The appendix now floats in the general peritoneal cavity with a mesentery that not only binds it to the caput coli, but also to the mesentery of the small intestine as it passes behind the distal end of the ileum. The appendix is, therefore, in nearly all cases, intra-peritoneal, is occasionally in the peritoneum *in toto*, but more frequently its base for a half or one inch is extra-peritoneal while the remainder is intra-peritoneal. The peritoneum from the cecum arches over the ileum to join the great mesentery, often forming a complete bridge, under which the ileo-cecal junction disappears when sufficient air is injected into the colon. This so-called normal position of the cecum, then, is on the front and outer edge of the psoas muscle internally and the iliacus externally. It lies in a line drawn vertically upward from the center of Poupart's ligament, and its lowest border is almost on a level with the anterior superior spines of the ilia. This is subject, however, to remarkable variations, readily explained by a consideration of its development. Indeed, a rather long appendix is often found dipping down into the true pelvis, lying on the iliac vessels, the obturator and genito-crural nerves, and in the female bearing important relations to the broad ligament and the right ovary. It may also point in various directions even when the position of the caput coli itself is normal. Sixty-four per cent. of my cases showed it to lie in the recognized position, either being curled on itself or pointing toward the sacro-vertebral angle. More than half the remainder lay on the psoas and hung into the pelvic cavity. The rest projected at various angles, either toward the pubes, the internal abdominal ring, the anterior superior spine of the ilium, or upward and outward parallel with the ascending colon. In one instance, an old case of hernia, it lay in the scrotum, with the cecum and five feet or more of the ileum, and was adherent (a very rare condition), with the rest of the bowel, to the sac.

Analysis of my specimens gave an average measurement of three-and-a-half inches in the female and three in the male. The shortest was only three-quarters of an inch. One was bifid, being represented by two little buds jutting out from the bowel. The longest was seven inches, possessed no mesentery, and was attached to the cecum and colon to within half-an-inch of the tip. One specimen was no larger than a knitting-needle, but was four-and-a-half inches in length.

The lumen is generally small, with its sides in apposition. In one case the interior was as large as the index-finger, and was completely filled, for quite an inch, with hard fecal matter, but no symptoms had been complained of during life from this condition.

A mesentery is generally present, and often gives the appendix remarkable latitude. Sometimes a large deposit of fat lies on the appendicular mesentery, and an elongated layer will simulate the appendix (Fig. 2). From the base of the appendix to the angle formed by the bend of the peritoneum, which is reflected over the end of the cecum from the iliac fossa, the average measurement was one-and-a-half inches.

FIG. 2.



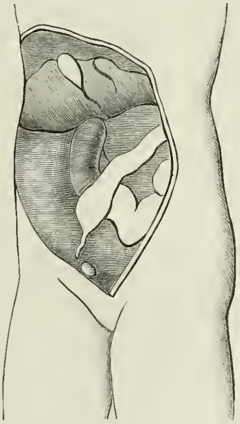
The structure, therefore, lies in a pouch much like a small pocket, bounded above and in front by the cecum, behind by the angle of peritoneum, and internally by the last inch of the ileum and the raised border of the psoas muscle. The opening into the cecum is quite readily seen, and is situated by average measurement rather more than one inch from the ileo-cecal mouth, and is guarded generally by an incomplete valve of mucous membrane, the good service of which is very doubtful. This seems not to be a regularly constituted valve, but a mere puckering of the mucous membrane. It is formed probably much in the same way as a hemorrhoid is enlarged by pressure. It is, at any rate, incapable of preventing air or feces from entering the lumen of the appendix.

In all cases the anterior band of fibers, which is characteristic of the large bowel, runs over the cecum and on to the vermiform process. It spreads out, as in the rectum, to form part of its structure, so that when from some cause the appendix cannot be found this longitudinal muscular band should be traced to its termination. It is quite half-an-inch in width and easily recognized.

The pocket of peritoneum in which the appendix lies is usually very thin, more markedly so than in any other region. In all the prepared specimens the serous membrane was very elastic, and when stretched to a considerable distance easily returned to its normal condition. Too much extension, however, destroyed this elasticity.

These experiments will serve to explain the enormous pouches found in some herniæ.

FIG. 3.



My dissections of the fetus at various stages of development offer marked contrasts to those of the adult. About the sixteenth week the liver fills almost the whole abdominal cavity, and when the parietes are removed only a few small intestines are seen peeping out from beneath its lower border. When this organ is turned up (Fig. 3) there seems to be no difference between the ascending colon and transverse colon, for the large bowel lies in an almost horizontal direction. The kidney is very large, and is easily seen through the thin transparent peritoneum. The appendix, instead of being attached like a small bud shooting out from a large trunk, as in the adult, in reality tapers off like a veritable continuation. No appreciable constriction is present as a line of demarcation, its base being of the same size as the cecum. Most of these processes were remarkably long in comparison with the rest of the intestinal tract.

As the organ is of the same size as the cecum at the fourth month and earlier, this fact tends to support the view that it is but a retrograde metamorphosis of that portion of the bowel. The duodenum is now the largest portion of the alimentary canal, the jejunum next, while the ileum, though much smaller than the former, is still larger than the colon. The testicle is found lying in the iliac fossa near the internal ring, through which it soon passes on its way to the scrotum.

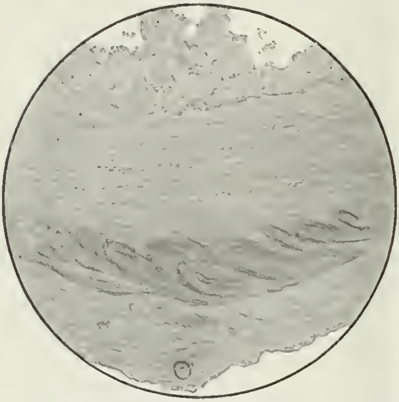
The arterial supply to the appendix is derived generally from the ileocolic artery, occasionally a special branch of the superior mesenteric itself. The little vessel runs on to the appendicular mesentery at its free border and spreads over its surface much in the same manner as in the ileum and colon. This is beautifully demonstrated in the thin transparent peritoneum of the fetus. In one well-marked case smaller vessels were traced upward in the serous membrane from the iliac fossa, derived probably from the external iliac or deep external iliac arteries. Its nervous mechanism is doubtless derived from the same source as the adjacent portions of the intestine, viz. : the intrinsic ganglia connected first with the sympathetic on the superior mesenteric artery, thence to the solar plexus and the splanchnics, the great and lesser.

It is evident, then, that vasomotor disturbances would equally affect the appendix with the general supply, except that its tendency to a retrograde metamorphosis has already altered the normal condition of its nerves.

Whatever may be the real condition setting up inflammation in this region, the appendix is in the majority of cases the seat of the trouble. It would seem reasonable to suppose that the cases that develop inflammation and get well in a few days should be due to the cecum, and the more serious cases leading to suppuration to the appendix. The bowel has a powerful peristaltic action to bear on the fecal material, and so aids evacuation ; but the appendix is rarely relieved of its contents in this manner. The circular muscular coat is comparatively meager in the appendix, but by no means totally absent, as some have asserted ; in fact, it was in one case of appendicitis much thickened, as well as the mucosa. Doubtless the appendix endeavors to rid itself of foreign material by contractions analogous to the vermicular action of the rest of the alimentary tract, and colic results.

The objection that has been raised to the occurrence of appendicular colic is that the circular coat is too meager to cause spasm. But it seems that it may hypertrophy under irritation, as it appears to have done in one particular case, that of Miss R., a patient of Dr. H. A. McCallum, who kindly gave me a portion of the appendix, which we both prepared microscopically, finding the circular muscular coat greatly thickened, and representing quite a third of the whole (Fig. 4) appendicular wall. This patient presented a history of six attacks of apparent appendicitis (appendicular colic) during two years.

FIG. 4.



Showing exudation of leukocytes between the muscle-fibers, as well as in the lymphoid tissue.

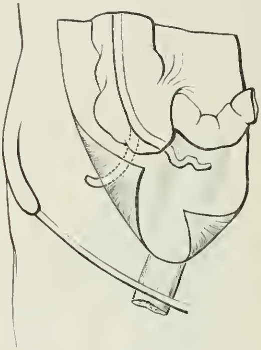
It would, therefore, seem right to praise any medical means directed to the prevention of a loaded cecum. By this the incipient foreign irritant of whatever nature would have less opportunity of insinuating itself too far into the opening of the appendix, as sometimes happens. Impaction of feces may not necessarily lead to any disturbance whatever, as in a few of my cases the lumen was completely filled with hardened contents of the intestines, yet without previous complaint of symptoms.

Appendicitis may well be mistaken for perinephric abscess, because there is in many cases but little distance between the appendix and the lowest portion of the right kidney. A localized pain in the right iliac fossa, however, arises from many other causes, the appendix being no more to blame than a molar in facial neuralgia. This suspicion is heightened when we notice that in most of the specimens examined, death resulting from other causes, no adhesions or other signs were present. It seems that most of the bad cases are due to the vermiform process, because material once firmly impacted has but little chance of removal. This nidus would offer a suitable colony for germs. Foreign bodies are found sometimes, and perhaps lead to suppuration more frequently than is supposed. During the evacuation of pus may they not be sometimes entirely overlooked and the trouble referred to some other cause?

If the appendix be really but a remnant, like many organs undergoing a retrograde evolution, it is liable to be inflamed. This may be due to a natural tendency, as the tail of a tadpole is removed for the purpose of inaugurating a new and more perfect era in the future life of the animal.

The question is often asked where the abscess forms in suppurative appendicitis. By this is meant after perforation has taken place. This will depend, of course, upon the position of the appendix and its relation to the peritoneum. If it be situated entirely behind, the angle of the serous membrane will be in front and the abscess will be retroperitoneal (Fig. 5). The cases in which the appendix is uncovered are the rarest. The first half-inch of its base is often behind the peritoneum, and perforation here would lead to a collection of pus behind. If it be invested entirely with serous membrane, as is the usual condition, it will be within the general cavity, and ulceration in any part of its course will lead to an intraperitoneal tumor. There are two or three reasons why this latter condition is not always present:

FIG. 5.



1. It is seen that the first half-inch is often uncovered, and perforation in that part would lead to a collection in the connective tissue behind the cecum.

2. The mesentery is often short and sometimes absent, the appendix being closely adherent to the bowel. Perforation may lead to a discharge by the rectum, as frequently occurs.

3. Even when five inches or more in length, situated entirely within the cavity and having an elongated mesentery, a retroperitoneal abscess often occurs. Although the appendix would seem to have a perfectly wide range of liberty, yet in the natural condition no space whatever is allowable. All parts

of the viscera, intestines, omentum, and parietes are closely pressed together in the same manner as the urethra is when at rest. The appendix will then, of course, lie in perfect apposition with the posterior layer of peritoneum and in front to the small intestine. Ulceration taking place in the posterior wall, leads to a matting of the appendix and the peritoneum, both layers are involved, and the abscess becomes retroperitoneal. This, in its turn, may again burst back and become intraperitoneal, or work its way in various directions. It would seem reasonable to suppose at first sight that when an intraperitoneal abscess is formed death would rapidly ensue. On account of close apposition of the structures the lymph thrown out during the inflammatory process forms a barrier or capsule that prevents general infection. If perforation took place suddenly, with overflow of pus, collapse would probably immediately occur. In one case only this wall or capsule was thick and as hard as cartilage.

A swelling in the right iliac fossa, then, may be due to many different causes, and any one of them, as far as the anatomy of the parts is concerned, may set up very similar symptoms. As the usual position of the cecum is on the front and outer edge of the psoas muscle, and also on the iliacus, and almost immediately above the center of Poupart's ligament, it will bear important relations to the following structures:

I. The ilioinguinal and iliohypogastric nerves, irritation of which would cause altered sensation in the lower parts of the abdominal wall, the iliac crest, and the inner side of the thigh. There may also be rigidity of the muscles in this region.

II. The external cutaneous and anterior crural, affecting sensation on the outer part and front of the thigh and the inner side of the leg below the knee. Pain in the knee-joint or spasm of the prefemoral muscles may follow, and there may be retraction of the testicle from involvement of the genito-crural; or, also, affections of the adductors of the femur, with possible hip-trouble through the obturator nerves. In a young man of twenty-two years hyperesthesia of the prefemoral region was a prominent symptom.

We may also have urinary symptoms from proximity of the kidney and ureter, flexion of the thigh by irritation of the psoas, altered circulation in the iliac and spermatic vessels, and perhaps obstruction of the inferior vena cava.

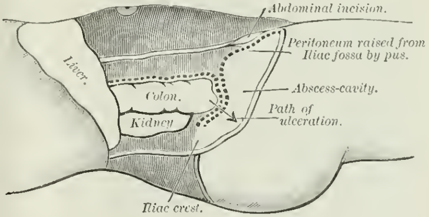
If, then, the cecum is so loosely connected in the peritoneal cavity as to be found in almost any position, pus will also be found in regions far removed from those where the appendix is expected to lie. Adhesions to an ovarian cyst have greatly complicated an ovariotomy. In an operation for hematosalpinx, with removal of the right tube and ovary, the appendix was found to be inflamed, and was removed. There was a distinct connection in this case between the two by a structure analogous to the so-called appendiculo-ovarian ligament.

This specimen (see Fig. 1), 6½ inches in length, lay external and parallel to the ascending colon, with its apex resting on the anterior surface of the liver, above the gall bladder. Abscess might have occurred in front or behind the hepatic lobe, involving the pleura or lung, without the real cause of the trouble being suspected.

As pus may be found in almost any position, the incision is to be made directly over the most prominent part and the pus evacuated. The most important anatomic structure to locate is the deep epigastric artery, which ascends upward and inward to the outer edge of the rectus abdominis muscle. If the knife be kept external to a line from the center of Poupart's ligament to the umbilicus, no danger will be likely to occur from this vessel. If it should be cut, the incision should immediately be enlarged and both ends tied. This is necessary on account of the free inosculation it has with the superior epigastric branch of the internal mammary.

As exhaustion is a frequent cause of death, may not an early operation better be performed immediately when pus has been found present ? Delay is certainly dangerous when an abscess is burrowing in close proximity to such a highly inflammable and important structure as the peritoneum.

FIG. 6.



As the cecum rests below the crest of the ilium, if excision be decided upon, operation from behind would fail to reach the appendix in a satisfactory manner. In case of abscess, though the pus burrows backward as well as downward in the recumbent position, drainage from behind would be facilitated by a posterior incision (Fig. 6) in the lumbar region. The bottom of the abscess-cavity is by actual measurement 2½ inches, or even more, below the incision in front and above Poupart's ligament. In a boy of eight years of age, a patient of Dr. Balfour, drainage was effected behind and close to the iliac crest, with rapid recovery, the little fellow leaving the hospital within a month.

This lumbar opening, though, carries a risk. Postmortem appearances show that operation for suppurative appendicitis should be conducted by the surgeon with the greatest care. Manipulation by insertion of the finger to hunt for some satisfactory solution of the condition might easily break down an extremely thin partition. Indeed, rather than use such force, would it not be better simply to incise the bulging part as one does an ordinary abscess in other regions? This may be done without washing out with syringe or other instrument, followed by a dressing with antiseptic absorbent material. Nature will undoubtedly endeavor to provide resolution in the same manner as when a boil is lanced, if good drainage is used. In other words, in too much manipulation lies the danger of breaking down the natural wall and setting up general peritoneal infection. This appeals to us more forcibly when we remember that the pouch-like cavity of peritoneum in which lies the appendix is the thinnest portion of serous membrane in the vicinity. The lymph-wall is occasionally so thin that the gentlest touch with the handle of the scalpel is sufficient to tear the tissue and allow pus to enter the general cavity. How important it is, then, to be extremely cautious!

The colon has a mesentery, a mesocolon, and this was present in 30 per cent. of my cases. When very long it may implicate matters somewhat in drainage from behind. In my experiments (post mortem) injection of the colon *in situ* with water or air invariably rotated the cecum outward, where it lay quite close to the anterior superior spine and crest of the ilium. If filled with feces or gas, it is very likely the tumor would be felt much nearer this region than in affections of the appendix; injection also caused the bowel to overlap the appendage, completely burying it behind the dilated coils, and in some cases entirely twisting the mesentery. This condition, taking place during life from large collections of gas, would possibly shut off the blood-supply to the process. The artery comes from the large mesentery, and lies behind the distal end of the ileum, where pressure would be liable to cause obstruction. The injected air not only enters the cecum, but the appendix as well, completely filling its lumen to the tip, offering further means for twists and pressure. In only a few cases did this experiment fail.

Whether air or gas ever enter the appendix during life is a question, but this may be tried with some profit on the ape or wombat, animals that are scarce in this vicinity. This may have some small place in setting up trouble by volvulus and pressure. Hence an altered blood-supply in an organ that is ever ready, as is said, on account of its retrograde tendency to spontaneous combustion, would be the result.

If this evolutionary theory be a correct one, the arteries and nerves have, perhaps, a tendency to degeneration, and the resisting powers of the appendix are lessened; hence, all such causes as twists and pressure predispose to trouble. When it is remembered that the appendage lies in a small pocket-like cavity, may not intermittent pressure from the impacted large bowel act in a similar manner? In one operation undertaken for recurrent attacks by Dr. John Wishart at St. Joseph's Hospital nothing whatever was found in the lumen, no glands in the vicinity were enlarged, and yet the distal portion was as large as the thumb, with its mucosa much thickened and inflamed. This lay immediately behind the cecum and wedged down in the bottom and angle of the pouch of peritoneum. Constipation was present.

When it is found necessary to open the abdomen, apart from a bulging abscess, some difficulty may be experienced in locating the exact position of the appendix even in the cadaver. If the incision be made in the median line, this will be increased, because the operator is wide of the mark, and the only structures seen are the omentum and numerous coils of small intestine. The best procedure would be, if possible, to lay open the abdomen in the right linea semilunaris. The ascending colon will be seen lying on the right side, and is recognized by its large size, sacculated appearance, more fixed and constant position, and a prominent band of longitudinal muscular fibers. This is half-an-inch in width and extending the whole length. Still, after this has been located the appendix may not come into view, even after lifting the lower end of the cecum and turning it inward. There may be bands of cicatricial tissue, or the appendix may be in an abnormal position. Sometimes an elongated piece of peritoneum or a diverticulum filled with fat has presented a similar appearance (Fig. 2). This has been so marked as to be entirely mistaken for the appendix in the post-mortem room and by students at the examinations, much to their disgust and my amusement. But one young gentleman was wise enough to incise the cecum and obtain the appendicular outlet. The specimen presented is a good representation of how this difficulty may arise, as the appendix is no larger than an ordinary knitting-needle. The specimen would be markedly similar when viewed through a deep incision, as it lies in the bottom of a deep, dark cavity, buried among numerous coils of intestine. But there is always one unfailing method, and that is, to follow down the anterior band of longitudinal muscle-fibers of the colon, which shows distinctly through the serous covering. In every dissection this was traced to the base and wall of the appendix, which it formed. When the appendix lies externally and ascends toward the liver the relative position of its internal opening to that of the ileum is still unaffected. The cecum is twisted a little outward at the base, and this band, instead of turning inward, follows its unfailing pathway to wherever the worm-like process lies.

CONCLUSIONS.

1. The development of the alimentary canal readily explains abnormal positions.

2. At the twelfth and sixteenth weeks there seems to be no difference in size between the base of the appendix and the cecum.

3. Prior to the sixth and seventh months the cecum and appendix lie well up in the abdomen, behind the liver or median line.

4. The appendix is nearly always found covered by peritoneum, and in most cases possessed of a mesentery.

5. There is generally a well-marked muscular circular coat.

6. The relative measurements between the exit of the appendix and the ileum are pretty constant.

7. The appendicular artery lies behind the distal portion of the ileum, and is accessible to pressure.

8. The wall of the appendix is always formed by the anterior band of muscular fibers from the cecum.

9. The appendix is readily filled with air from the cecum. In only a few cases did this fail.

10. From its position in a pocket-like cavity it is accessible to pressure from an impacted large bowel.

11. Feces collected in the lumen of the appendix do not necessarily set up any pathologic disturbance.

12. Air or fluid injected into the large bowel invariably rotates the cecum outward, in close relation to the anterior superior spine and crest of the ilium.

13. In this experiment the appendix is often dragged into abnormal positions and twisted on itself.

14. When ulceration takes place, with extraperitoneal formation of pus, two layers of serous membrane are involved if the appendix be intraperitoneal. Anatomically, it is possible for pus to separate the layers of the appendicular mesentery.

15. The lowest part of the abscess-cavity in the recumbent position is two or three inches on a lower level than the incision in front and above Poupart's ligament.

16. An intimate relation sometimes exists between the tubes and ovaries with the appendix. In such a case suppurative appendicitis and hematosalpinx were both present, though no distinct suppurating tract could be traced between them.

17. A swelling in the right iliac fossa will give rise to similar symptoms from like anatomic relations to important viscera, vessels, and nerves.

18. When a large collection of pus has formed in the iliac fossa a tender spot may generally be felt in the lumbar region on the crest of the ilium, close to the sacro-iliac articulation. A downward incision at this point will be sufficient to evacuate the abscess.

CLINICAL MEMORANDA.

INTESTINAL HEMORRHAGE IN UREMIA.

BY JOHN ALDEN LICHTY, M.PH., M.D.,
OF CLIFTON SPRINGS, N. Y.

ALTHOUGH all standard authorities upon clinical medicine give quite a list of symptoms of uremia, we rarely find hemorrhage from the bowel mentioned, and still more rarely do we find cases of it reported. Under the general causes of such hemorrhage Whittaker[1] mentions the forms of nephritis marked by uremia, and Musser[2] says that it may occur in connection with hemorrhage from the mucous surfaces. Bartels[3] twice refers to it as a symptom of renal disorders, and gives a full report of one case of genuine contracting kidney in which there was "considerable loss of blood per anum" for consecutive days; and yet "the autopsy furnished no information upon the exact etiology of the hemorrhages." Davidson[4] reports a case of uremia with hemorrhage in which the autopsy revealed an ulcer in the duodenum, with obliteration of the cystic duct, and various writers speak of ulcerative and even diphtheric processes occurring in the ileum and large intestine of patients dying from uremic poisoning. Owing to the limited number of cases that I have been able to find, I report four cases which occurred in the Philadelphia Hospital while I was resident physician under Dr. W. E. Hughes and Dr. S. S. Cohen as visiting chiefs. All four occurred within three months.

CASE I.—Mr. H. H., fifty-nine years of age, a German, had upon admission dyspnea and swollen feet; the urine contained casts and albumin in abundance, and the bowels were constipated. Four days before death his bowels became loose, and much blood was passed with the stools, some dark and some bright red, He died in uremic coma. The autopsy showed both kidneys very much contracted, and dotted profusely with large and small cysts. The stomach and duodenum seemed normal; the mucous membrane of the small intestine, and especially of the colon, was deeply injected with blood, but no distinct points could be found as the seat of the hemorrhage.

CASE II.—Mrs. McC., forty-four years old, a housewife, was born in Ireland. When admitted she was in a condition of general anasarca, and the urine contained abundant casts and albumin. One week before death she had large bloody stools, and there were also subcutaneous ecchymoses and hemorrhages from all the mucous membranes. Uremia developed eighteen hours before death. She had convulsions and nystagmus, and the respirations were only six per minute. Eighteen ounces of blood were then taken from the median vein, and caffeine citrate, gr. v, and tr. digitalis, ♏xv, were given hypodermically. The patient rallied at once, and became conscious and rational. The respirations rose to 20. In several hours she again became comatose, and died twelve hours later.

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[1] Pepper's System of Med., vol. ii, p. 832.

[2] Med. Diagnosis, p. 669.

[3] Ziemssen's Cyclop. Prac. Med., vol. xv, pp. 158–162.

[4] Liverpool Med.-Chir. Journal, 1888, vol. viii, pp. 480-482.

At the autopsy both kidneys were found to be small and scarred, and showed an advanced stage of chronic interstitial nephritis. Purpuric spots appeared in the skin and mucous membranes. In the intestines there were numerous large areas of submucous hemorrhagic extravasations, but no distinct points of external hemorrhage.

CASE III.—Mr. C. A., seventy-six years old, was a German by birth. The man had been in the hospital for nearly a year, and at various times he had had swelling of the lower extremities. The urine contained albumin and casts. Four days before death he began to have involuntary evacuations of the bowels, attended with free hemorrhage, which finally became so profuse that it really seemed to be the immediate cause of death, though the patient had been in uremic coma for twenty-four hours. Unfortunately no autopsy could be obtained.

CASE IV.—Miss A. O., aged thirty-five years, was a deaf-mute. She had general anasarca, and the urine contained casts and albumin. The bowels were usually constipated, but at various times she had diarrhea. Frequently the diarrheal stools contained blood, sometimes dark and at other times bright red. At this writing the patient is still living.

It will be noticed that in neither autopsy was there any lesion found other than a submucous extravasation of blood. Such being the case, it seems highly probable that the hemorrhage from the bowels was due to a general oozing of blood from the capillaries and arterioles which lay within the mucous and submucous coats of the intestines; and this tendency to oozing may be due to the extensive sclerosis which was so well marked in the cases just reported.

A CASE OF INCARCERATED HERNIA AND ITS REDUCTION BY MEANS OF RECTAL TAXIS.

BY GEORGE S. BROWN, M.D.,
OF BIRMINGHAM, ALA.

ON February 21st I was called to see a white child, C. M., two months old, who, while crying and straining at stool, suffered a right inguinal rupture. I saw him thirty minutes after the accident occurred and discovered a cylindrical-shaped tumor, three inches long and of a nearly uniform diameter of about one inch, distending the right scrotum and extending up to the internal ring. The end of the tumor occupying the bottom of the scrotum was easily made out to be a portion of bowel distended with gas. This composed about one-third of the total length of the tumor. The remaining two-thirds, or two inches, was a solid non-compressible mass. It was traced to and found to be firmly wedged in the inguinal ring. Under profound anesthesia from chloroform and with the child held vertically by the feet to secure the additional aid of gravity I began an attempt to reduce it by taxis. It was a surprise to me to find how very tightly this solid portion of the hernia was wedged into the inguinal opening. It conveyed a sensation to the hand similiar to that of a corn-cob stopper in a jug (to use a readily understood simile), one that had been forced into the jug with an effort and time allowed for the inner end to absorb fluid and swell to the size of the large end outside. Upon introducing my finger into the rectum, after half-an-hour of futile effort at taxis in the ordinary way, I was even more forcibly struck with the exactness of the foregoing comparison. The tumor could be moved about between my finger in the rectum and my external hand in any direction except vertically through the ring. Just here it seemed to me that I had discovered something valuable, as I found I had absolute knowledge and control of the entire hernial mass. By making steady pressure on the mass from without, while with the finger in the bowel I pushed from side to side in every direction the portion of the mass presenting through the abdominal opening of the inguinal canal, I was finally rewarded by feeling the mass move back through the opening slowly and tightly all the way, and at last drop back into the abdomen. This portion, clearly omentum, had followed the loop of bowel through the ring and caused immediate and complete strangulation. The loop of bowel, now that the wedging epiplocele was put out of the way, retreated rapidly under gentle taxis and disappeared with the characteristic flop. The process of reduction is exactly illustrated by inverting a bottle of champagne which is a little stale. The force of the contained carbonic acid will represent the steady pressure maintained by my outside hand, while the to-and-fro motion of the thumb on the cork, to aid its expulsion, will represent the action of my finger in the rectum on the interior portion of the tumor. This finger in the rectum gave exact knowledge of when and how much, first, the epiplocele and, then, the bowel moved, and just when they successively passed back through the internal ring. The tip of the finger could then be introduced into the internal opening. Another useful aid it gave was that on lessening the pressure from without I could push it up alongside the tumor and dilate the internal ring.

On a somewhat superficial search I can find no mention of this method of rectal taxis in the reduction of hernia. If it has before been employed, I would be grateful for information on the subject. At any rate, I wish to emphasize my conviction as to the value of it. Taxis in this case in the ordinary way, with the child inverted and profoundly anesthetized, had completely failed. The finger in the rectum, introduced for examining purposes, rendered the reduction possible and saved a cutting-operation, which was then being prepared for.

I would suggest finally that a recently incarcerated inguinal hernia in an adult might be reduced in a similar manner. A surgeon with a small hand might introduce it entire into the rectum and give material aid to the efforts at taxis without, by traction with finger and thumb on that part of the tumor just within the internal ring. I say this might be possible, and when such a case presents itself I shall certainly try it.

I would add that the child had no further symptom of any injury, being apparently as well as ever the next morning.

Reports of the Meeting of the American Medical Association and of the principal sections for the first days will, by special arrangements, be published in next week's issue of THE MEDICAL NEWS. The remainder of the reports will be in succeeding numbers.

RETRACTION OF THE EYES IN A CASE OF ABOLISHED ADDUCTION AND ABDUCTION.

BY VITO LUIGI RAIA, M.D.,
OF PROVIDENCE, R. I.

H. F., a girl, twenty years of age, came to the Rhode Island Hospital, June 9, 1894, to have her eyes tested for glasses, and showed the following peculiarity: The vision of the right eye was normal; of the left, slightly subnormal. Under homatropin the right accepted

+ Sph. 2 D, ○ + cyl. 0.25 D, axis 90°;

the left,

+ Sph. 2 D, ○ + cyl. 0.50 D, axis 90°.

In both eyes the vertical movements were normal; abduction and adduction were completely abolished in the right, and were very limited in the left. If an object was brought near the patient while she made efforts of convergence, the eyeballs were seen to move alternately backward for about two or three millimeters, until one eye alone remained in a stable position, and the lids at the same time manifested movements of oscillation. When invited to read, the patient brought the book to the right or to the left side, and turned her head toward the median plane of the body in order to direct properly one of the visual lines. She thus evidently used only one eye at a time, but sometimes it was the right and sometimes the left for near; for distance, binocular vision was possible only when an object was directly in front. In the oblique position one visual axis could be fixed upon the object aided by a certain inclination of the head.

This case is interesting, first, because of the symmetric disturbance of the muscles in both eyes; second, because of the congenital origin of the trouble; third, because of the backward movements of the eyeballs when efforts at convergence were made; and fourth, because of a certain clonic contraction of the lids that accompanied the efforts of convergence.

In regard to the etiology, the abolition of adduction and abduction in both eyes may depend either upon a congenital nuclear paralysis, or upon an abnormal attachment of the external and internal recti muscles on the posterior part of the globe. In the last hypothesis the internal recti would have no power in rotating the eyes on the vertical axis, but would simply pull them backward, and the peculiar movements of retraction during the efforts of convergence would thus be easily explained.

The oscillation of the lids, due to clonic contraction of the orbicularis, has nothing to do with the movements of retraction, because the repeated separation of both lids from the globes with a retractor has no effect in diminishing it.

Dr. Cheney, of Boston, has reported another case in the *Medical Record* of November 7, 1891, but not having had the opportunity to read the original article, I do not know in what respect it differs from the case I have reported.

Dr. Isaac Wayne Hughes died at Gulf Mills, Montgomery County, on April 26th, at the age of sixty-three years. He was graduated from the Medical Department of the University of Pennsylvania in 1852.

BACTERIOLOGIC NOTE.

SOME IMPROVEMENTS IN THE TECHNIQUE OF THE DIPHTHERIA CULTURE-TEST.

BY A. P. OHLMACHER, M.D.,
OF CLEVELAND, OHIO.

THE modifications in the prosecution of the diphtheria culture-test herein described will be presented under three heads, as follows:

I. A method of making the bacteriologic diagnosis of diphtheria in four hours with the aid of the incubator.

II. A method of making the culture-test in eighteen hours without the incubator.

III. A suggestion as to the preparation of Loeffler's diphtheria culture-medium.

I. When the diphtheria culture-test was used for sanitary purposes alone the matter of the time consumed in the bacteriologic examination was of no great moment, and a physician was perfectly content to wait eighteen or twenty-four hours for its results. With the advent of the antitoxin-treatment of this disease an entirely new era of usefulness for the culture-test was inaugurated which imposed new obligations on this diagnostic method. The diphtheria culture-test is the natural and legitimate prelude to the clinical use of the new remedy. The diphtheria-antitoxin is successful just as it is used early in the disease, and therefore the culture-test is of value in proportion to the promptness with which its results can be obtained. Under the best of existing methods it is necessary to allow an interval of from twelve to eighteen hours of incubation to elapse before a tube of culture-medium, inoculated with the material from a diphtheric throat, can be examined bacteriologically. This is the rule in all the directions given for this test both in this country and in Europe. Twelve hours is, however, a long time for a clinician to wait, especially if he is withholding the costly diphtheria-antitoxin treatment until a positive diagnosis shall have been reached.

All of the disadvantageous features of the culture-test have occurred to me during a recent extensive series of diphtheria-examinations made in connection with the antitoxin-treatment, and it has been my good fortune to discover a method whereby the time can be lessened, and an accurate bacteriologic diphtheria-diagnosis can be made in four hours from the time a tube of inoculated culture-medium is placed in the incubator.

As is well known to those conversant with the practical details of the diphtheria culture-test, it is customary for bacteriologists to wait until *visible* colonies of the bacteria appear upon the surface of the culture-medium before a microscopic examination is made. In some emergency diphtheria-examinations recently made at the Summit County Children's Home, at Akron, Ohio, it was found necessary to use the heat from a furnace-register to grow the cultures. One of these examinations was made eighteen hours after the culture-medium had been inoculated, and, although no trace of a colony was visible to the eye, I determined to make a microscopic preparation from the apparently smooth surface of the medium in the hope of securing enough bacteria to permit of a diagnosis. The experiment was surprisingly satisfactory, as plenty of characteristic diphtheria-bacilli were found. With this almost accidental experience as a start, a series of experiments have been carried out, with the result of positively establishing the value of the method in my own mind. In detail, the rapid method of diphtheria-diagnosis may be carried out as follows:

A tube of Loeffler's serum culture-medium, prepared after the modified, or American, method of rapid coagulation, with a smooth, moist, slanting surface, is inoculated with the exudate from the suspicious throat secured with the aid of the Prudden swab. It is of prime importance that the slanting surface of the culture-medium be both perfectly smooth and moist; and care should be taken not to injure the surface of the serum as the cotton swab is rubbed gently but thoroughly over it. A serum with a smooth, exposed surface can be obtained by skilfully preparing the medium; and a moist surface may be secured either by keeping the water of condensation in the tube until just before it is to be used, or by sealing the freshly prepared medium by means of a rubber cap, or with a piece of gutta-percha tissue. As soon as the inoculated tube is received at the laboratory it is placed in the incubator, the temperature of which is 37.5° or 38° C., where it remains undisturbed for four hours. At the end of this time a thoroughly flamed platinum loop is gently rubbed over the smooth surface of the culture-medium, and then the loop is rubbed into a minute drop of distilled water placed in the centre of a clean and sterilized cover-glass. In this way the material obtained on the loop is washed into the drop of water, and while no visible accumulation will have been observed on the platinum loop, an examination of the drop of water with a proper illumination will reveal it to be distinctly cloudy after the washing. The drop of water is now evenly spread, by the use of the loop, over a limited area of the cover-glass. This spreading is also of importance, since an extensive spread would separate the bacteria so widely as to render subsequent examination uncomfortable. If a three-quarter inch square cover-glass has been selected for the work, the first drop of water placed on it should not be more than an eighth of an inch in diameter; and after the mixing and spreading, this drop of water should not cover an area more than one-fourth or three-eighths of an inch in diameter. As soon as the film has dried the cover-glass is passed three times through the flame, and then stained. Personally, I am very partial to methyl-violet[1] as a stain for the diphtheria-bacillus, and it is especially suited for the present method on account of the intensity with which it colors these micro-organisms. After staining, the preparation is washed with water, dried, and mounted temporarily in glycerol or cedar-wood oil, or permanently in Canada balsam.

A specimen prepared in this way will, upon examination with the microscope, reveal the diphtheria-bacilli, providing the case be one of true diphtheria; or it will show the micrococci of false diphtheria.[2] The number of bacteria in one of these early preparations is, as a rule, not great; but no trouble will be experienced in finding plenty of organisms upon which to base a satisfactory diagnosis, providing one is thoroughly familiar with the morphologic characteristics of the various bacteria encountered in the culture-test.

It may be interesting to note, in this connection, that in these early cultures the diphtheria-bacilli show very little of that irregularity in morphology that is considered characteristic of them in the later cultures. Pavement epithelial cells from the throat are frequently encountered in these preparations. Very fine preparations, with numerous bacteria, are also often obtained.

In my own work I have had no trouble in easily making a diagnosis in this manner, and the experiment has been repeated time after time with material from a variety of sources, until no doubt remains in my mind as to its practicability. In every case in which an examination by the rapid method was made, the culture-tube was saved and examined at the end of twelve or eighteen hours' incubation as a control-test, with no variation in the results.

II. One great drawback to the more extensive use ot the diphtheria culture-test, especially in the hands of the practising physician, lies in the expense and trouble of maintaining an incubator in which to grow the cultures. Several more ingenious than reliable simple incubators have been recommended for use, and now and then some one has suggested that the diphtheria patient's person be utilized as an incubator to hatch the diphtheria-germs. These suggestions have naturally borne little fruit.

Applying the underlying idea of the modified method just outlined, I have found it possible to make a very satisfactory examination of a throat-culture at the end of eighteen hours' exposure at the room temperature. As a rule, no visible colonies will have developed on the surface of the inoculated Loeffler's medium when kept at the room temperature for eighteen hours; but, proceeding in the same way as with the cultures kept four hours in the incubator, it has been found possible to obtain very satisfactory preparations, which were all that could be desired from the diagnostic standpoint.

This method has also been tried a number of times, and controlled by proper experiments, and I now have no hesitancy in recommending it to anyone who is familiar with such work. In this way a physician will be able to make his own diagnosis of diphtheria in eighteen hours, without an incubator. For emergency diphtheria-work in which the bacteriologist finds himself without an incubator, this method will also answer a good purpose.

III. In both of the foregoing methods it is necessary not only to have a smooth and moist Loeffler's culture-medium; but this medium must be so prepared as to offer to the diphtheria-bacilli the best possible conditions for rapid multiplication. Those familiar with the manufacture of Loeffler's blood-serum medium know that one of the very important factors in its preparation lies in the neutralization of the glucose-beef-peptone-bouillon that is added to the serum before its coagulation. The bouillon must have its acid properly neutralized with some alkali, or else the diphtheria-bacilli will be seriously retarded in their growth. Sodium carbonate or sodium hydroxid is ordinarily used to neutralize the bouillon, being added drop by drop until the point of neutralization is reached.

My experience in the preparation and use of this diphtheria culture-medium has convinced me that it is very desirable to carry the addition of the alkali to a point at which a decided alkaline reaction is shown in the bouillon, instead of stopping precisely at the neutral point. A saturated sodium-hydroxid solution is employed for this purpose, and is added drop by drop until a pronounced blue color is obtained with red litmus-paper.

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[1] For details in the preparation and use of this stain, see New York Medical Journal, March 2, 1895, p. 269.

[2] This is true whether the culture proves the case to be one of pure diphtheria-bacillus infection, one of mixed diphtheria-infection, one of mixed micrococcus-infection, or one of streptococcus-infection.

Loeffler's medium prepared with this bouillon appears to be unusually well suited for the rapid growth of the diphtheria-bacillus, and it has been found especially adapted to the prosecution of the rapid culture-diagnosis of diphtheria by one or the other of the modified methods just described.

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MEDICAL PROGRESS.

Hysteria with Trophic Symptoms, Simulating Syringomyelia.—Wichmann (*Berliner klinische Wochenschrift*, 1895, No. 12, p. 252) has reported the case of an unmarried girl, twenty-seven years old, two of whose sisters had had epileptic attacks and in whom there appeared painless ulceration of the extremities of the fingers, leading in part to spontaneous amputation and in part to surgical removal. A suppurating ulcer formed upon the left forearm, alternately healing and reopening. At this time, after an attack of vertigo, the right arm was found to be heavy and weak, while the right thigh was numb and insensitive. The removal of a tooth from the upper jaw on the right side was unattended with pain. For a period of four weeks there was difficulty in evacuating the urine, so that the use of the catheter became necessary. There was little wasting, and the electric reactions were normal. There was no fibrillary contraction. The pharyngeal reflex, the right abdominal, the triceps, biceps, and forearm reflexes on both sides were wanting, as well as the conjunctival reflex. The skin-reflexes were wanting on the chest and back. The knee-jerks were increased and slight ankle-clonus was present. Common sensibility was impaired upon the entire right side of the body, including the head, but excepting the right foot, as it was also on the left hand and forearm and the lower half of the arm. Throughout this area the sense of pain and of temperature and the electro-sensibility were wanting. In the middle of the occiput was a small area of sensitiveness, increased upon touch. There was also undue sensitiveness in the left ovarian region. The fields of vision were contracted, the right more than the left. The pupils were reactive to light and in accommodation. The sense of smell was impaired upon the right side as compared with the left, and hearing on the right as compared with the left. The sense of taste was enfeebled upon the posterior portion of the right half of the tongue.

In the course of observation ankle-clonus disappeared and the anesthesia extended to the right foot. The nature of the disorder was positively established by the results of hypnosis. In this state the patient was able to raise the affected arm vertically and to move the right leg. By this means it was also possible to have the patient appreciate needle-pricks, hot substances, and the electric brush upon the left upper extremity. The woman improved sufficiently to take up some work, many of the symptoms disappearing, but at a later date when placed under less favorable conditions the symptoms began to return. Improvement was again effected by hypnotic suggestion, so that the patient continued to do well when favorably situated and not so well when her surroundings were less congenial.

The Etiology of Dysentery.—Celli and Fiocca (*Centralblatt für Bakteriologie und Parasitenkunde*, vol. xvii, Nos. 9 and 10, p. 309) report the results of a study of sixty-two cases of typical dysentery observed in Italy and Egypt. They were unable to find a specific pathogenic micro-organism, and concluded that the amœba coli could not be viewed as the direct cause of the disease: (1) because cases of epidemic, endemic, and sporadic dysentery occurred without the presence of discoverable amebæ. (2) They found that dysentery free from amebæ could be produced by inoculation with dysenteric feces or with cultures containing amebæ and bacteria, and also with amebæ destroyed by heat. (3) Amebæ were very common in the neighborhood from which the cases were derived, so that it is not surprising that they are frequently found not only in the intestines of dysenteric patients, but also in the intestines of those who had never had dysentery. Various forms of amebæ, such as the amœba guttula, oblonga, spinosa, diaphana, vermicularis, and reticularis, are found as harmless intestinal parasites in healthy persons, and in others presenting intestinal affections, including dysentery. The amœba coli has attracted attention by its form and its motility, the remainder escaping ordinary observation. Dysenteric stools contain constantly the bacterium coli commune, usually in association with a transitory variety, resembling the typhoid bacillus, and frequently with the streptococcus, and sometimes also a proteus. Dysentery may be induced experimentally by means of the bacterium coli introduced by the mouth or by the rectum, and sometimes by means of the other organisms named. It is possible that the activity of these is responsible for the transformation of the bacterium coli commune into the bacterium coli dysenteriæ, which is capable of transmission from animal to animal. This organism is characterized peculiarly by its capability, when administered by the mouth or the rectum, or injected subcutaneously, of generating a toxin that induces the typical lesions of dysentery. This toxin is precipitated from bouillon cultures by alcohol, and is soluble in water. It is capable of causing death before the local lesions have had time to develop. A variety of this intoxication is presented when melena occurs in conjunction with dysentery.

Gonorrheal Pyelitis and Pyoureter Cured by Irrigation.—At a recent meeting of the Johns Hopkins Medical Society, Kelly (*Bulletin of the Johns Hopkins Hospital*, vol. vi, No. 47, p. 19) reported the case of a woman, thirty-one years old, presenting an extensive accumulation of pus in the left ureter, extending up into the pelvis of the kidney, in consequence of a stricture of the vesical end of the ureter, with dilatation above it, and associated with gonorrheal infection. The stricture was treated by dilatation with a series of urethral catheters, increasing in diameter from two mm. to five mm. After evacuating the purulent fluid the ureter and the pelvis of the kidney were irrigated with medicated solutions, the caliber of the stricture was enlarged, and the quantity of accumulation above reduced from 150 to 100 c.cm. The purulent secretion was removed and all trace of gonococci disappeared. The following points are demonstrated by this case: Stricture of the lower extremity of the ureter can be diagnosticated, without operation, by using the cystoscope, with the bladder dilated with air by posture. Stricture of the ureter can be improved by gradual dilatation by a series of hollow bougies (catheters and) without kolpo-ureterotomy. A stricture through which a No. 5 (5 mm. in diameter) bougie is passed every day for several weeks will still hold back the urine if the walls of the ureter above have lost their contractility. Pyo-ureter and hydro-ureter can be diagnosticated by drawing off in a few minutes such a quantity of fluid as it is manifestly impossible for the kidney to secrete in that amount of time. Pyo-ureter and pyelitis can be cured by washing out the ureter and pelvis without any preliminary cutting-operation to disclose the ureteral orifice (as in kolpo-uretero-cystotomy). Variations in pressure in the column of fluid in a distended ureter can be demonstrated by a manometer attached to the ureteral catheter. In this way the course of the ureter can be mapped out.

The Spinal Lesions of Pernicious Anemia.—Burr (*University Medical Magazine*, April, 1895) has reported a series of cases of pernicious anemia presenting symptoms and lesions referable to the spinal cord. He finds that the localization of the lesion is fairly characteristic and constant. The cervical swelling is always the seat of greatest change, and the lesion progressively diminishes in intensity and extent, so that the lumbar cord presents little or no change. The parts affected are the posterior columns, the lateral columns in and near the crossed pyramidal tracts, the direct pyramidal tracts, and rarely a band running forward along the circumference of the cord (the direct cerebellar tracts). The gray matter suffers slightly, if at all. The posterior nerve-roots likewise suffer but little. The lesion is always symmetric, though sometimes extending a greater distance on the one side than on the other. The opinion is expressed that the primary change probably occurs in the nerve-fibers themselves. Among the symptoms observed are ataxia, abolition or exaggeration of the knee-jerks, sometimes paraplegia, and often slight, but not characteristic, sensory changes.

Diphtheria followed by Symptoms of Hereditary Ataxia, Epilepsy, and Dementia.—Hoffman (*La Médecine Moderne*, 1895, No. 25, p. 199) has reported the case of a boy, ten years old, who at the age of four had an attack of diphtheria with paralysis of the palate and pharynx, and with weakness of the heart. On arising from bed at the end of a month difficulty in co-ordination was observed. All four extremities were ataxic, both on intended movement and at rest. The gait was staggering and the entire body was involved in choreoid movements. There were, besides, nystagmus, loss of the knee-jerks, epileptic attacks, and pronounced dementia. The fields of vision were diminished, but the fundus of each eye was normal. Speech was difficult. The child was well developed and presented no visceral lesion. It is believed that the attack of diphtheria was not directly responsible for the symptoms, but that it excited the development of these as the result of a persisting but latent condition.

Syringomyelia with Reflex Iridoplegia.—At a recent meeting of the Société de Biologie, Lévi and Sauvineau (*Le Mercredi Médical*, 1895, No. 15, p. 173) reported a case of syringomyelia presenting sensory dissociation, muscular atrophy in the hands and shoulders, spastic paraplegia, cutaneous trophic disorders, some loss of tactile sensibility, and inco-ordination of all four members. On laryngologic examination the right inferior adductor of the vocal band was found paralyzed. The right external rectus was paretic and the right internal rectus contracted spasmodically, with resulting homonymous diplopia. The pupils reacted in accommodation, but not to light; the right was contracted, the left dilated.

The Normal Situation of the Gall-bladder in Males.—To find the gall-bladder, Hamilton (*Journal of the American Medical Association*, vol. xxiv, No. 15, p. 551) recommends that a line be drawn from the anterior superior spine of the ilium to the center of the xiphoid appendix and be intersected by another line from the umbilicus to the tenth chondro-cartilaginous junction. The fundus of the gall-bladder will be found in the right upper triangle near the apex, but nearer the right oblique line, and a needle thrust through the abdomen at the point indicated will usually transfix the viscus.

THERAPEUTIC NOTES.

The Treatment of Diphtheria with the Antitoxin.—Bókai (*Deutsche medicinische Wochenschrift*, 1895, No. 15, p. 233) reports the employment of the antitoxin in the treatment of more than one-hundred-and-fifty cases of diphtheria, and analyzes the results observed in one-hundred-and-twenty followed to their termination. Diphtheria-bacilli were found in all but five of these. Sixty-nine were in children less than three years old, and forty-five in children less than two years. In forty-nine intubation was required. Of the one-hundred-and-twenty, thirty-one died (25.5 per cent.). The mortality among the intubated cases was 43 per cent.; among the non-operative cases, 14 per cent. As compared with previous years, it appeared that in 1891 during a corresponding period the mortality among non-operative cases was 40 per cent., and among intubated cases 70 per cent.; in 1892, respectively 45.5 and 57.7 per cent.; in 1893, 45.7 and 77.5 per cent. Eighteen of the deaths occurred in children less than two years old, and twelve within forty hours after admission to the hospital.

Eucalyptus Oil as a Disinfectant in Scarlatina.—Priestly (*Lancet*, No. 3736, p. 361) reports the results of observations made in 120 cases of scarlatina treated with oil of eucalyptus. Careful rubbings all over the body were practised three times a day for three days, followed by one rubbing after a warm bath. The disinfectant was also sprayed into the patient's throat, mouth, and nose, and diffused into the air of the room. Sequelæ and complications were treated with the usual remedies. As compared with 161 cases treated with other measures, the mortality in the 120 treated with eucalyptus was as 1.6 per cent. to 4.3 per cent.; the stay in the hospital of non-fatal cases was as 34.4 per cent. to 42.7 per cent.; that of fatal cases 8.5 per cent. to 13.4 per cent.; the time between the commencement of treatment and the return of normal temperature, as 11.4 per cent. to 10.3 per cent.; the percentage of complications and sequelæ, as 20 to 27.3; the percentage of return cases, as 3.9 to 5.

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A GLIMPSE OF SOME AMERICAN MEDICAL ANTIQUITIES.

WHILE we are hunting up our claims to Colonial and other descent and are tracing back our ancestry so far that prehistoric man fairly trembles, let us pause and think for a moment how valuable to us is the really old and true, and if we lack antiquities which can vie with those over the sea, why, where everything is relative, should we neglect and ignore the few choice specimens of the antique which are preserved among us? Not so very hoary, it is true; but our own locks are youthful, and we must reverence our aged as we find them, and let the old world's aged take care of themselves.

We in Philadelphia have not so very far to look or so very long to search. The old hospital at Eighth and Spruce stands firmly, having been well built, and looks calmly, as well it may, having performed its duties faithfully and quietly for a century-and-a-half. Its corner-stone is there, the leaden statue of Penn is there; its front looks pretty much as it must have looked an hundred years ago, being built of honest brick, in the plain substantial way. When additions were needed, they came without marring its symmetry, and through its halls the same unending succession has come of those whose names are always honorable in medical and civic annals, and the same steady line of residents and students, working faithfully for it, and in after-life still working in the same persistent, honorable, and useful way.

What better antiquity could we have than this? It answers our aspirations just as well as though its brick walls had risen at the word of some old-world monarch or minister a thousand years ago. For looking back into the mist of ages, we can see so little and so dimly, and beyond, "a thousand years are but as yesterday" even to us.

How very interesting the story of such a building can be one learns from reading the newly published *History of the Pennsylvania Hospital from 1751 to 1895*, by DRS. THOMAS G. MORTON and FRANK WOODBURY.[1] Its authors have done their work with a free yet loving hand. They have looked at the Hospital as the Hospital looked on the land in which it grew, as an institution bound up inseparably with the hopes, successes, and discouragements of those among whom it worked and had its being. They have made its walls of dingy brick transparent to the heart-beats and struggles of the living hearts within. Just how its founders started it, how they choose the ground for it, where the money came from, how the Assembly dealt with them and it, how they selected its staff, what kind of men they were, and what rules they made and endeavored to live up to, just how they felt when the British army took the Hospital by storm, filled its wards with their sick and wounded, and ran off finally with its spoons and valuables; how the human hearts of the managers quaked a little when epidemics came, and how they resolved to meet, for greater safety, at the far-off ferry on the Schuylkill while the yellow fever raged; how scantily attended were their meetings then, between yellow fever and sudden thunder-storms deterring them, the minutes show, and how a manager dreamed a dream that came wonderfully true, and probably many that did not,—all this and much more is of intense interest to us. We may laugh at the zeal of the antiquarian, but as we read we would be antiquarians ourselves.

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[1] The History of the Pennsylvania Hospital, 1751–1895, by THOMAS G. MORTON, M.D., Fellow of the College of Physicians, President of the Medical Staff and Senior Surgeon to the Pennsylvania Hospital, President of the Philadelphia Academy of Surgery, etc. Assisted by FRANK WOODBURY, M.D., Fellow of the College of Physicians, Honorary Professor of Clinical Medicine in the Medico-Chirurgical College, etc. Publication authorized by the Contributors at the annual meeting, May, 1893, and directed by the Board of Managers. Philadelphia: Times Printing House, 1895.

The management was often in financial difficulties during its earlier years. The war was being carried on, and they were often compelled to dispose of securities, "while loans were returned depreciated in value, or paid in paper money which could not be redeemed." "Their distress culminated when the British army entered Philadelphia, September 26, 1777. The English military authorities forcibly took possession of the Hospital, filled it with their sick and wounded soldiers and sailors, overturned the usual orderly management, and on their departure appropriated to their own use the blankets, bedding, and instruments, for which the Hospital received no compensation, either at the time or afterward."

The depreciation of the Continental currency seems to have made no end of trouble, debts to the Hospital being paid in almost worthless paper. "The loss of capital and interest by the Hospital from April, 1774, to April, 1784," shows its capital impaired more than one-half, not including the loss in students' fees and patients' board, paid in depreciated currency, and during this period, "hard money" being necessary, the managers were at times obliged to borrow on their own private credit. When, in 1780, the Assembly granted an order in favor of the Hospital for ten-thousand pounds, Continental money, it was worth only one-hundred-and-sixty-three pounds and some shillings.

The circumstances connected with the will of Benjamin Franklin and the refusal of the managers to accept its possible benefits, are explained by extracts from the will and the managers' minutes. In his will Franklin writes: "During the number of years I was in business as a stationer, printer, and postmaster, a great many small sums became due to me for books, advertisements, postage of letters, and other matters, which were not collected when, in 1757, I was sent to England by the Assembly as their agent, and by subsequent appointment continued until 1775, ... and the said debts not being demanded in such length of time became in a manner obsolete, yet are nevertheless justly due. These as they are stated in my great folio "Ledger E," I bequeath to the contributors of the Pennsylvania Hospital. . . . . I am sensible that much must inevitably be lost, but I hope something considerable may be recovered." This doubtful legacy, after investigation by the managers, was declined, because "the committee found also divers blanks, debits and credits, the amount of which they are not able to ascertain. . . . . They called on several persons who appear to be in debt, some of whom say they have accounts against the doctor exceeding considerably his demands against them. . . . . Upon the whole the committee conceive there is no probability of the legacy being productive."

The yellow fever seems to have made its first appearance in the Hospital record, August 28, 1793, a patient having been admitted in violation of the rules, and extra caution in granting admission to the hospital was enjoined upon the staff; and by September 30th, the minutes state that the disease was "raging in the city with great violence, and a Board of Managers cannot be expected to meet until it abates." Drs. Rush and Park are named as the only members of the staff who remained in the city; but later Dr. Foulke appeared and excused his absence from duty, as "it was improper for him to attend the hospital when he was continually among infected cases." That the epidemic deserved to be remembered may be seen from the fact stated in the minutes, that in ninety-nine days "upward of four-thousand persons have died in the city and liberties," computed to be about one-fifteenth of the inhabitants. The managers, however, felt "that they had reason to be thankful that during the awful visitation not more than two persons in the fever were admitted into the hospital, who died therein without spreading the contagion."

In 1798, the hospital being too dangerous, meetings of the managers were held at "Middle Ferry," on the Schuylkill. The names of those recorded as present at the meeting September 24, 1798, were Samuel Coates, Robert Waln, Israel Pleasants, Robert Smith, and Mordecai Lewis, Treasurer. Of Samuel Coates, whose name occurs very frequently, much material being gathered from his diary, there is related a very curious dream followed by a very speedy fulfilment, connected with the efforts of the panic-stricken prisoners in the Walnut Street Jail to escape. Considering that many were confined for debt, our more enlightened age would probably have opened wide the doors for their escape.

The accessories of hospital life, the slow growth of rules and regulations, of bounds and penalties, restrictions slowly evolving from the necessities and perversities of human nature, have all been considered worthy by the authors of research and study. The slow development of modern methods in the care of the insane, from the few damp cells of the old hospital to the space and beauty of the new department; the question of mixed clinics, showing how it struck the managers, and all the perplexities it introduced, things all of them now of the forgotten past—all these are judiciously and simply related; and if these fail to excite interest, there is the biographic chapter, with its lives of the men who made the hospital what it was and is, as managers, physicians, and surgeons, with their portraits, whenever they could be obtained, reproduced with all the too often scanty facts that make up our little records of past lives.

How the hospital acquired its library, its museum, and its works of art, more especially the history of the famous picture "Christ Healing the Sick," are fully related, and the long list of contributors to its permanent funds will be scanned with interest by many eyes.

The original painting of "Christ Healing the Sick" by Mr. West, we are told, "excited such general admiration when exhibited in England, that patriotism took alarm, and nobles and commons, with one accord, agreed in making a determined effort to retain it in the country." Mr. West then agreed to furnish a copy. It reached this country in 1817, and when placed on exhibition attracted such throngs that the income received from it up to 1843 amounted to more than twenty-five-thousand dollars. Various letters from Mr. West and the Board of Managers are given, with an account of its transfer to Philadelphia and its location there, and a very spirited reproduction of the picture itself faces page 314.

The various pictures of the Hospital taken, from time to time, are reproduced with all the data concerning them, even to the bills of the engravers. The leaden statue of Penn, which was a gift from John Penn, his grandson, "in lieu of a portrait which he had, at first, proposed to give the Hospital," was brought over from London in 1804. This statue was blown over in a severe storm in 1850, and after being repaired was replaced in its old and present position on the lawn south of the Hospital. Should one not be able to visit it there, a survey of the figure upon the tower of the Public Buildings will give a fair idea of its general appearance.

With rare discretion all the available gossip and small incidents of the past which bore any relation to the Hospital or its officers have been rescued and incorporated into the history, which opens like a thrilling tale with these words of the Preface: "About ten years ago in an abandoned closet of the 'Retreat,' an out-building of the hospital, was found a large collection of letters, accounts, and memoranda which were liable to be lost or destroyed." These letters, etc., formed the nucleus of the book, the germinant idea, working on which, with many an excerpt from the minutes and reproductions of old grants, deeds, bills, and other papers, the authors have constructed their history. The invaluable recollections of Dr. Charles D. Meigs, published in the Hospital's first report, are reprinted, for Dr. Meigs formed for the living almost the only medical link with Philadelphia's medical past, as a man whom some can personally remember, and who himself had listened to the voices of Physick and Rush, and whose graceful art of writing rendered the recollections of his younger days vivid and luminous to us. All these things, throwing light upon points of medical and general interest, add a charm of reality to the picture of the distant day when the Hospital stood in the fields, away from the growing city, with open country stretching far around it on almost every side.

It seems scarcely probable that the multitudinous modern hospital flourishing on specialism and State appropriations, with its long rows of private rooms and accommodations for the worthy and unworthy rich rather than the deserving poor, will ever attain to great honor in its green or ripe old age. Such honor and such tender associations will remain rather the prized and cherished possession of those institutions that have grown, not with the rank luxuriance of modern specialism and modern competition, but with the slow and steady accretion of years, and whose origin dates back so far as to seem almost coincident with that of the community in which good men have done their work and earned honestly from day to day their reward of love and trust.

ANTITOXIC THERAPEUTICS.

Although the endeavors of chemists to synthetize quinin have failed of success, they have yielded results scarcely less important than if their original object had been fully attained. More or less directly to the labors in this direction may be traced the discovery of many of the modern so-called antipyretics. Of late years scientific activity has taken another direction, and the progress thus far made gives promise of leading to still more important and beneficial results. Were the guiding principles at fault the disastrous consequences of the tuberculin-treatment of tuberculosis would have forever ended the history of biologic therapeutics; but it is not so, and it seems a reasonable hope that we shall hear more of the specific treatment of disease, and even of tuberculosis. While the work is not yet completed, and the results are perhaps not conclusive, the evidence is strong and growing that we shall ere long be in possession of means for successfully treating the various infectious processes.

It was early learned that little could be hoped for from agents directed to the destruction in the diseased body of the causative organisms, but when it was appreciated that the disease-symptoms are largely attributable to the circulation of the toxic products of these organisms, the use of biologic antidotes naturally suggested itself, and with results that are certainly suggestive, not to say demonstrative. It is quite within the bounds of conservatism to concede, in a general way at least, some efficacy to the antitoxic treatment of tetanus, of cholera, and of diphtheria, while some doubt may be admitted as to pneumonia and typhoid fever, and no opinion can yet be expressed as to the results reached in the study of syphilis and smallpox.

There is great activity at present in this line of research, and some good may be hoped for as the ultimate outcome. Particularly suggestive are certain reports from Paris, which go to show that specific curative properties are possessed by the serum of animals rendered immune to streptococcus-infection. At a recent meeting of the Société de Biologie MARMOREK (*Compt. Rend. Hebdom. des Séances de la Société de Biologie*, 1895, No. 7, p. 123) related that by passing streptococci a number of times through rabbits he succeeded in developing in the former an extraordinary degree of virulence, so that the smallest quantity was intensely fatal. From these cultures he succeeded in isolating a toxin of great activity. Naturally immune animals treated with large doses of either the cultures or the toxin yielded serum possessing prophylactic and curative virtue, as demonstrated by experiments upon rabbits.

In a later communication (*Ibid.*, No. 12, p. 230) the same observer reported the results of the employment of this antitoxin in the treatment of forty-six cases of erysipelas. Recovery ensued rapidly in all but one, which occurred in a woman of sixty-seven, who died ten hours after the injection, as a result of pneumonia, which was present on admission to the hospital. The injections were followed by speedy lowering of the temperature, amelioration in the general condition, subsidence of the local phenomena, and disappearance of albumin from the urine when this had been present.

CHARRIN and ROGER (*Ibid.*, No. 7, p. 124) reported the employment of serum obtained from a mule treated with the products of bouillon-cultures of the streptococcus of erysipelas. At the end of ten days such cultures were reduced on the water-bath to one-tenth of their original bulk, and were then exposed in a thermostat to a temperature of 115° C. Then, at intervals of two weeks, injections of 30 c.cm. of the sterilized cultures were made into a vein of the mule for eight successive times. With this serum was treated successfully a woman twenty-eight years old, suffering with puerperal fever of moderate severity. Two doses of 8 c.cm. and one of 25 c.cm. were administered. In a second case (*Ibid.*, No. 12, p. 224) a similar result followed the injection of one dose of 26 c.cm., three of 20 c.cm., and one of 10 c.cm. In a third case, one of erysipelas in a child three weeks old, recovery resulted after one injection of 5 c.cm. Three injections of 30 c.cm. in a case of pseudo-membranous angina due to streptococci and staphylococci, in a woman twenty-five years old, were likewise followed by recovery.

At a previous meeting, and also at a subsequent meeting, of the same Society HÉRICOURT and RICHET and TRIBOULET (*Ibid.*, No. 1, pp. 13, 15, 17, 18; No. 13, p. 268) reported further observations on the application of serotherapy to the treatment of tuberculosis and of syphilis.

These results are not the birth of a day or of accident, but they are the natural outcome of the growth and development of biologic investigation and pathologic research, and represent stages in the elaboration of what promises to be a great and enduring truth. A realization of the hopes based upon the advances already made in the domain of antitoxic therapeutics would place the treatment of disease upon a scientific plane that it has hitherto not occupied.

EDITORIAL COMMENTS.

The Mechanism of Agraphia in Cases of Cortical Motor Aphasia.—One of the most interesting, as well as most complex, subjects in the domain of cerebral physiology is that of the faculty of expression. Most of our knowledge of the processes concerned has been derived from the evidence afforded by pathologic observation—the association and correlation of the clinical phenomena present during life with the lesions found after death. The important demonstration by Broca many years ago that lesions of the third frontal convolution on the left side caused in right-handed persons the derangement of the mechanism by which thought is transformed into expression has been followed by a train of observations that have greatly expanded our knowledge on this subject, although there still remains a good deal to be added to complete the story.

Expression of thought by gesture, by writing, by speech, or by any other conceivable mechanism depends, first, upon the revival of a previous sensorial impression; secondly, upon the co-ordination of the necessary motorial impulses; and, finally, upon the activity of the peripheral neuro-muscular apparatus. Derangement of any one of these processes will be attended with interference with one or other mode of thought-expression—the first sensory or amnesic, the second motor or ataxic, the third paralytic. The particular mode of expression interfered with and the character of the disturbance depend upon the situation of the lesion and the educational development of the individual.

Expressional processes dependent upon visual and auditory impressions, for instance, are lost when the centers for sight and hearing respectively are destroyed, while all of the usual modes of expression are lost as a result of lesions of the motor center in the third frontal convolution. These centers, as is well known, are most commonly situated in the left hemisphere, but their functions and activities may be represented in the right half of the brain. Varying degrees of disturbance result from interference with the connecting paths between the centers concerned in thought-expression. Inability to read (alexia) must exist when visual impressions are not properly interpreted, as in mind-blindness or word-blindness. Inability to write (agraphia) spontaneously or on dictation must exist under the same conditions, although the ability to transcribe from copy may be preserved, while inability to write on dictation must be lost when mind-deafness or word-deafness exists, although the power of spontaneous writing or of transcription may remain.

In order to determine whether or not agraphia is dependent upon a lesion of a special graphic motor center, said to be situated in the second frontal convolution of the left side of the brain, Mirallié (*Compt. Rend. Hebdom. des Séances de la Société de Biologie*, 1895, No. 12, p. 250) made a series of observations in ten cases of aphasia. These he made attempt to write spontaneously in the ordinary way, to write upon dictation, to transcribe from copy, and to write the names of objects presented to them. Finally, he had them attempt the same exercise with the aid of cubes, upon each surface of which was one letter of the alphabet. For control-purposes he subjected to the same experiences two patients not affected with aphasia, but of equal degree of intelligence and education with the others. The result of the investigation showed that there was no difference in facility or difficulty between writing in the ordinary way and forming words with the aid of the lettered blocks. One patient was able to trace some of the letters of his name and to copy well, and to do as much with the blocks. Six were able to write their names, but were unable to write spontaneously any phrase whatever. Writing from dictation was defective, while transcription was well preserved. The result with the cubes was much the same. One patient, who had largely recovered from his aphasia, was able to write spontaneously and upon dictation equally well by hand and with the cubes. The last two patients, who were quite cured of their aphasia, were able to write spontaneously, upon dictation and by transcription, and were able to form words equally well with the cubes. There thus appeared to be a perfect parallelism between the ability to write in the ordinary fashion and to form words with the cubes.

The conclusion is reached that in cortical motor aphasia the agraphia does not depend upon any difficulty in tracing upon paper the letters and forming them into words, but upon a failure to evoke the memory of the letters and of the words, and that agraphia does not result from a motor disturbance, but from a loss of graphic images, and is thus not dependent upon a lesion of a special graphic motor center specialized for the movements of writing.

The Pathology of the Pancreas.—It is only within comparatively recent years that any notable additions have been made to our knowledge of the pathology of diseases of the pancreas. A decided impetus was given to the subject by the epoch-making researches of Fitz,[1] who practically established upon a firm clinical basis the symptomatology and diagnosis of acute pancreatitis and allied conditions. Of the etiology of these we practically know nothing, and this line of research affords a field for investigation that promises to yield important and interesting results.

Recent clinical and experimental observations have shown that some lesions of the pancreas are attended with glycosuria, but an even more obscure association is that with the peculiar condition known as fat-necrosis. While this has been observed most commonly in connection with pancreatic disease, it has also been found in some cases in which such disease could not be demonstrated. An interesting contribution to this subject has recently been made by Hildebrand (*Centralblatt für Chirurgie*, 1895, No. 12, p. 297), who, in a series of experimental observations on cats, succeeded in inducing fat-necrosis by ligation of the pancreas or its vessels, and by transplantation of the organ in whole or in part. In two animals the pancreas alone was ligated; in six others ligatures were also applied to all of the veins. Sugar was found in the urine of one of these. In one instance a bit of pancreas, two by three centimeters, was excised from the continuity of the organ and fixed with a suture in the omentum of another animal; and, again, an entire pancreas was treated in the same way. In another experiment a whole pancreas was scarified and made to surround a portion of the small intestine. The animals withstood the operations well, but in all the characteristic white areas of fat-necrosis appeared in the peritoneum comparable to that observed in man.

The Consumption of Alcohol, Tea, and Coffee in England for Thirty-two Years.—According to the *Lancet* (March 30, 1895, p. 821), investigation shows that while there has been in England since 1861 an enormous increase in the consumption of tea, coffee, etc., there has at the same time been a steady diminution in the consumption of both beer and spirits, the lines indicating the last two being practically parallel, not only with one another, but approximately with the base-line. Between 1861–'62 the total consumption of tea, coffee, etc., was 120,000,000 pounds. This figure rose until in 1893 it was 265,000,000 pounds. In the same period the population increased from 28,500,000 to 38,500,000, so that while in 1861 the consumption of tea, coffee, etc., per head was 4.38 pounds, in 1893 it was 6.90 pounds. In 1861 the consumption of wines and spirits equalled 35,000,000 gallons or 1.22 gallons per capita, and in 1893, 52,000,000 or 1.35 gallons per capita, the highest figures, 1.80 gallons, being reached in 1876, since which time the consumption has steadily diminished. The amount of beer consumed per capita was in 1861, 24.3 gallons per head; in 1874, 34, and in 1893, 29.6 gallons. In 1861 the total consumption of tobacco was 34,000,000 pounds or 19¼ ounces per capita. In 1863 the duty on cigars was reduced, and the consumption rose to 21½ ounces in 1865; to 23¾ ounces in 1877. In 1878 and 1879 the duty on tobacco and cigars increased, and the consumption fell to 22½ ounces per capita. From this time it gradually recovered until 1887, when the duty was reduced. The consumption quickly rose until it attained 26 ounces per capita in 1893, and the total consumption 62,000,000 pounds.

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[1] Medical Record, February 23, March 2 and 9, 1889.

An analysis of these figures shows that there has been a decided diminution in the demand for intoxicating stimulants, while there has been a considerable increase in the demand for non-intoxicating stimulants, principally tea and coffee.

The Sanitarium Association of Philadelphia.—We cannot refrain from again calling attention to the noble and life-saving work of the Sanitarium Association of Philadelphia, whose object is to afford poor children and their attendants the opportunity of securing a day's airing and escape from the city's heat in summer-time. From the eighteenth annual report of the Association we learn that during 1894 this object was carried out on seventy-three days between June 7th and August 31st. In this period there were no less than 158,390 admissions to the Sanitarium at Red Bank, exceeding the largest previous record by 26,497, and the annual average number for the preceeding fifteen years by 86,654. Of the whole number, 67,306 included children under five; 110,751 children under ten, besides 41,686 adults, for whom two days in the week have been especially set apart. Medical attention is given to such children as require it. In addition provision exists for the hospital care of a limited number of children. Of this privilege 207 children under the age of five availed themselves during the year. Skilled nursing forms an important adjunct in this connection. Among recent improvements is a bath-house for infants and young children, provided with twenty durable tubs, so separated the one from the other as to afford some degree of privacy. Thorough supervision is given the bathing, so that excesses or abuses are not permitted. Food is abundantly provided for all, free of charge, and clothing is furnished to the most destitute. So economically and successfully were the affairs of the Association administered during the year that the cost per capita was 7.7 cents, a lower figure than for any preceding season. We feel sure that the mere recital of these interesting data will stimulate the philanthropic to aid substantially so worthy an undertaking. Mr. Edward H. Rowley, 5 North Front Street, is the treasurer of the Association, and will no doubt be glad to receive contributions in money or other useful articles.

The Growth of First-born Children.—As the result of a series of measurements of school-children, Boas (*Science*, N. S., vol. i, No. 15, p. 403) found that first-born children exceed later-born children in stature as well as in weight. The difference was found to prevail from the sixth year until the adult stage in females, and from the sixth year to the fifteenth year in males. The difference in stature was found to be 10 mm. in girls to 7 mm. in boys, and the difference in weight was 1.6 pounds in girls to 1.2 pounds in boys. The observations seemed, further, to indicate that second-born children exceed somewhat later-born children in stature and weight. It is inferred that the greater vigor of the mother at the time of the birth of the first-born, and the greater care bestowed upon the first child during its early childhood may be the cause of the difference. The cares due to the increase in the household tend to weaken the mother and to decrease the amount of motherly attention devoted to later-born children. These observations show a reversal of the conditions found at birth, as it has been found that the weight and length of newborn children increase from the first-born to the later-born.

Remarkable Surgical Activity.—The *Lancet* (March 30, 1895, p. 823) relates that Surgeon-Lieutenant G. C. Hall was recently called upon to operate on a patient in an Indian village some twelve miles from the railway and twenty-six miles from any English station; and, although no means was taken to let the people in the surrounding villages know of the intended visit, the news of the surgeon's coming spread, and a large number of natives came to receive treatment. During a period of six days 394 patients were seen, 147 operations were performed, including the removal of sixty-nine cataracts. The surgeon lived in a camp; the operations were all performed in the open air under the shade of a large mango tree, the patient lying on a native bed, at the head of which the operator sat. As far as possible the cases were treated antiseptically. When the surgeon left, a native assistant remained to look after the subsequent care of the patients.

CORRESPONDENCE.

IN RE WHITE'S OPERATION FOR HYPERTROPHIED PROSTATE.

To the Editor of The Medical News,

Sir: Dr. Belfield, in the *Journal of the American Medical Association* of March 9, 1895, and Dr. Bangs, in the *Medical Record* of April 6, 1895, published under the heading "Warning against Castration for Prostatic Enlargement," communications which, while they express some views with which I am in entire accord, contain, on the other hand, statements that hardly seem justified by the facts now before the profession.

No one could deprecate more than I the indiscriminate performance of the operation. I suggested it with great caution, laying before the American Surgical Association the line of thought and the experimental work that seemed to me to give the idea scientific standing. More recently I wrote (*British Medical Journal*, January 5, 1895; THE MEDICAL NEWS, Dec. 22, 1894) that while the evidence then existing obviously and amply justified the original suggestion, I desired to call attention to the fact that I had not made it without hesitation. I added that, "having observed with disapprobation the undiscriminating assaults of some extremists upon the urethra, the tubes, and the ovaries, and more recently upon the appendix, I did not want to be responsible for a similar attack upon the testicles," and that I knew that "the step from experiment to operation is and should be a long one, and felt the responsibility involved in proposing a new operation, and especially one of this character—easy of performance, with a low mortality, and intended for the relief of a condition of enormous frequency."

I am still most desirous of having the operation confined within its proper limits, and to this extent am in sympathy with the gentlemen mentioned.

But when Dr. Belfield says that while it is admitted that "castration may cause atrophy of glands, subsidence of edema, and relief of distress, but that it will not reduce the hypertrophied connective tissue is *à priori* probable;" and Dr. Bangs writes that "a theoretical operation, based upon observations upon dogs and eunuchs, in whom physiological atrophy of the prostate is said to be induced by the abrogation of its sexual function, cannot reasonably be applied with the expectation of getting the same results in elderly men in whose prostates hyperplasia has already taken place," and reiterates that the operation "is based on theory alone," they seem to me to ignore existing and conclusive evidence. This is now complete in every particular as regards the effect of bilateral castration on the majority of hypertrophied prostates. The experimental and theoretic stage has long since been passed. I have in my possession sections of a prostate taken from a patient that died after, but not because of, the operation, which show clearly that it *does* reduce the entire gland, and that the hypertrophied connective tissue shrinks and dwindles after the earlier disappearance of the glandular elements. But that this assertion may not rest on my statement I would quote Mr. Joseph Griffiths, F.R.C.S., Hunterian Professor of Surgery and Pathology in the Royal College of Surgeons, England, who has recently reported on the condition of an enlarged prostate eighteen days after double castration. He describes in detail and figures (*British Medical Journal*, March 16, 1895) the changes which had taken place, summing up as follows: "In short, the cell-elements first proliferate, and ultimately disappear, leaving a comparatively small amount of fibrous connective tissue in their place. . . . The gland, whether enlarged or normal, undergoes certain degenerative changes after removal of the testicles which lead to its conversion into a small, tough, and fibrous mass in which there are only remains of the glandular tubules and ducts."

As to the clinical evidence Dr. Bangs urges that, to test the results of the operation, "the size of the prostate should be determined by three examiners, and the examinations repeated with sufficient frequency to determine positively the size of the organ." These conditions which are somewhat rigid, have been complied with in all my own cases, in one of which the estimated shrinkage of the size of the prostate from that of a small orange to that of a walnut took place in a week. A half-dozen examiners confirmed this, and several hundred medical students saw the patient and learned directly from him of the concomitant and remarkable improvement in his symptoms. Dr. Lilienthal, of New York, two weeks after the publication of Dr. Bangs's letter, published the report of a case (*The Medical Record*, April 20, 1895) which so completely answers all Dr. Bangs's theoretic objections as to be conclusive in itself. I may add, however, that I have now notes of similar cases to the number of nearly one-hundred, in most of which all previous palliative treatment had failed, and in which the results have been equally striking. It seems to me too late to say, as Dr. Bangs does, that the relief appearing within a few hours has been too positive to be attributed to the operation itself, because "it hardly seems rational to believe that a hyperplastic organ in which, no doubt, there has been an increase of the connective-tissue element, should diminish in size within a few hours after castration has been performed." The facts are against him. The hyperplastic organs do diminish in size, and often in an almost incredibly short space of time.

Both the gentlemen who have been moved to warn the profession emphasize the possibility of mistake in diagnosis, Dr. Belfield going so far as to say that "whenever a case of real or supposed prostatic enlargement demands operative relief this should always be an incision into the bladder." I am quite willing to admit that there must be some doubtful cases, and that in these and in a certain proportion in which the diagnosis is certain a cystotomy will often be desirable. But it is assuming altogether too much to claim that this is "always" proper. I have not found the great majority of cases of prostatic hypertrophy difficult of recognition nor of classification by combined rectal and instrumental exploration. But if I may be thought to be mistaken as to this and other similar questions raised by these gentlemen, it is hardly likely that Fenwick and Moullin and Griffiths in England, Bereskin in Russia, Helferich and Meyer and Hænel in Germany, Ramm in Norway, Watson and Warren in Boston, Halsted and Finney in Baltimore, McBurney and Stimson and Pilcher in New York, Andrews in Chicago, Souchon in New Orleans, Walker in Detroit, Haynes in Los Angeles, and dozens of other surgeons of more or less prominence have been wrong as to their diagnosis, or in saying that previous palliative treatment has failed, or unreliable in their descriptions of the rapid and sometimes astounding shrinking of the gland and disappearance of the subjective symptoms, even including long-standing cystitis. They are all now on record to this general effect at any rate.

Dr. Belfield alludes to a case in which a patient with a large prostate, "evidently inflammatory," and severe cystitis, was found, by suprapubic incision, to have a small calculus, previously undetected. He adds: "Prolonged vesical drainage was followed by great reduction of the prostatic enlargement and by a symptomatic cure." He then imagines with apparent horror the status —professional and legal—of the surgeon, who might have done castration, when the calculus was subsequently discovered. This sort of argument appears to me to be misleading, as it lacks necessary detail. The age of the patient, indicating the value of the testicles from a sexual standpoint; the relation of the calculus to the enlargement of the prostate—*i. e.*, whether cause, which would be rare, or effect, which would be common; the period indicated by the word "prolonged"; the presence or absence of a urinary fistula; and the exact condition called a "symptomatic cure," should all be known before any such comparison could be drawn. I mention the case because in a gentleman, aged seventy-six years, with a large prostatic hypertrophy and a secondary calculus, which had formed after a previous litholapaxy, and which lay in a deep post-prostatic pouch, I have within the last month deliberately performed castration as a primary operation. Two weeks later, the prostate having shrunken to one-sixth its former bulk, the residual urine having disappeared, and the cystitis (in spite of the presence of the calculus) having almost vanished, I crushed and evacuated the stone. The patient was sent to me by Dr. Schum, of Huntingdon. He went home free from all symptoms.

Dr. Belfield says, finally, that "the claim that double castration is safer than drainage, is not, in his experience, warranted, if drainage be made either by perineal urethrotomy or suprapubic incision in *deux temps*; the danger in cases that really demand operative interference is the anesthetic, not the knife." But drainage in most cases is only a palliative measure, and, if permanent, is a source of more or less continued danger and of great discomfort to the patient. Dr. Belfield has very properly described it under the head of "Palliative Operations" in an article that he has published elsewhere. It is not fair, therefore, to compare it at all with a measure that in properly selected cases is curative, and which thus challenges comparison with the various forms of prostatectomy. He might almost as well have written of the mortality of catheterism, which also gives great relief in some cases. As to the anesthesia, as double castration can easily be performed within three minutes, it seems unlikely that any serious objection to the operation will prevail on that account. I have on several occasions completed it in a little less than three minutes before the class at the University of Pennsylvania, and without undue haste. In regard to the general question of mortality, however, I may be pardoned for quoting from a personal letter from Sir Joseph Lister, who writes me: "I am glad to see from the cases that have been published that your remedy has proved so effectual in this most distressing class of patients. If I have any fault to find with you in speaking of the advantages of your procedure, it is that you seem to me to underrate them when you say that castration is an operation of little danger. You might, I think, have truly said that if it is performed with sufficient antiseptic precautions it is entirely free from danger. The *rapidity* of the relief afforded seems to me as remarkable as it is satisfactory. Allow me to congratulate you cordially on this valuable addition to our art."

My personal and professional regard for the gentlemen who have criticised the operation, and my knowledge of their sincerity of purpose, have led me to reply at such length; but I also have been actuated by a desire to have both its merits and demerits kept fairly before the profession. There is much yet to be determined in regard to it, especially as to the selection of suitable cases and as to its remote effects; but I think I may fairly claim that the existing evidence—experimental, pathologic, and clinical—removes it from the region of theory and speculation, and demonstrates its applicability to a large proportion of cases of hypertrophy of the prostate.

Dr. Bangs's statement that "if this theory could be proven, about one man in three, after the age of fifty, ought to submit to castration in order to prevent enlargement of his prostate," is an extension of the operative field which must be regarded as peculiarly his own. I have as yet not considered the subject from the standpoint of early prophylaxis. As the theory *is* proved, it would be interesting to know how Dr. Bangs proposes to select his cases. Very respectfully,

J. WILLIAM WHITE.

1810 S. RITTENHOUSE SQ., PHILA.

THE TREATMENT OF OPIUM-POISONING BY POTASSIUM PERMANGANATE.

To the Editor of THE MEDICAL NEWS.

SIR: It is now nearly a year since an editorial regarding the permanganate treatment of opium-poisoning appeared in the *Journal of the American Medical Association*, May 19, 1894, which concluded with the statement that "a new antidote to morphin was not urgently demanded, since the treatment already in general use is very efficient, and, as a rule, successful.[1] No argument has the power that facts possess, and it is for that reason that an answer to this editorial is more appropriate now than it would have been a year ago.

First of all, the expression "a new antidote to morphin" is, strictly speaking, incorrect. The editor of the *Journal* should have said "an antidote to morphin was not urgently demanded." There was no antidote to morphin known up to the time I made my humble efforts in that direction. Does the writer of the editorial consider belladonna and its alkaloids as opponents of morphin? Can one narcotic be a real opponent to another narcotic? Many authorities, among them Brown-Séquard and J. Harley, dispute an antagonism between these two narcotics. Harley concludes that in medicinal doses the essential effect of morphin (hypnosis) is both increased and prolonged by the action of atropin, whether introduced previously or at any time during the operation of the former. Dr. John S. McLain, of Washington, in a paper entitled "Narcotics and Narcosis in Children" (see *Archives of Pediatrics*, June, 1893), says:

"The opinion which has been gaining ground for several years seems now well established that belladonna and its alkaloids are of little use in the treatment of opium-poisoning, W. H. Thompson going so far as to state that 'the cases in which the opium-narcosis is really dangerous are those in which belladonna is useless, if not injurious.' Lenhartz, in his experiments on dogs, came to the conclusion that in no case did the alkaloid have any effect upon the more dangerous appearances, the coma, cramps, and convulsions, and hence he holds that the opposing power is limited and of no avail in serious cases, the atropin increasing the heart-depression already brought about by opium, and that 'the physiologic antagonism between atropin and morphin is not established by a single authentic observation.' Dr. T. D. Smith, of Louisville, Ky., writing upon the subject, remarks: 'In order to root out more rapidly the prevalent error as to the use of atropin, it would be better that it be not mentioned at all in connection with the treatment of opium-poisoning.''

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[1] My attention to this editorial was called by Dr. T. S. Carpenter's report in your esteemed paper of June 23, 1894, of a case of accidental morphin-poisoning, in which the permanganate had rendered him signal service. Dr. Carpenter criticises the editorial, but from a standpoint differing from mine.

As to emetics, they cannot be called antidotes in the true sense of the word; besides, they are utterly unreliable in narcotic-poisoning, and are simply inducive to loss of precious time. Dr. McLain, in the paper above mentioned, says "that it is a great mistake to attempt to induce vomiting by copious draughts of hot mustard-water; forty grains of ipecac in water, twenty grains of zinc sulphate in water, etc., as recommended in many of our text-books." Another objection, he says, to flooding the stomach with these fluids is that they themselves serve to dissolve the poison, whatever it may be, and hence aid in its more rapid absorption. On the same ground he objects to copious draughts of black coffee.

On the other hand, I have shown beyond a doubt that the contact of permanganate and morphin results in rendering the latter instantaneously harmless,'and therefore the permanganate is the only antidote to opium known so far. It cannot be styled a new antidote. There does not exist an old one. If it does exist, I should like to know its name.

It is with some satisfaction that I now can point to about thirty-five cases of opium-poisoning in which the antagonist has proved its great value. Yet how much quicker would it have acted had it been employed at the very beginning of medical assistance, instead of allowing so much valuable time to be lost by resorting to other plans of treatment. First destroy the poison, rid the body of its foe, and then Nature will be ready and quick enough to restore impeded functions; the damage will then be repaired without difficulty. To remove the obstacle and to annihilate the poison should be our very first duties. It is truly a miracle that the potash-salt did accomplish so much when circumstances combined to defeat its success. Even in the case I had (see *Medical Record*, March 2, 1895) my colleague legitimately resorted to the usual methods for an hour-and-a-half before I had an opportunity to invoke the aid of the permanganate. Still the patient comparatively quickly responded to it, and my mind was relieved of a great burden; for, had I lost the patient, the entire odium would have fallen upon the salt of permanganic acid.

I shall now make a statement which may create severe comment or may place me in the light of an enthusiast, but which statement the experience of the future will justify and uphold. I say that any physician arriving at the side of a person suffering from opium-poisoning, who does not at once administer to that person a sufficient quantity of the permanganate, commits an act of gross negligence.

The ambulance-surgeon should first administer the potash salt before conveying the patient to the hospital. Is it not unjust, unreasonable, to submit a patient to the shaking and rattling of the wagon, which is bound to promote the absorption of the poison by the stomach? Every physician, every ambulance-surgeon, should keep the permanganate of potash among his emergency drugs. Let the stomach-pump alone, for its use only increases the cerebral congestion already present. Discard atropin; do not superadd one narcotic to another. If one need to strengthen the heart-action, resort may be had to strychnin hypodermically. If one wish to give coffee, let it be given as an enema. Artificial respiration is necessary, and let the patient be kept awake, but not too forcibly, by the use of cold affusions; but, above all, let us not neglect the thorough and judicious administration of the powerful opponent of the narcotic in question.

It should be given to meet three different indications: First, it should be given by the mouth, well-diluted, to annihilate any opium or its alkaloids that still may be in the stomach. If the patient is unable to swallow, the antidotal solution can be administered through the nose with the aid of a hard-rubber catheter, a piece of rubber-tubing, and a funnel. These appliances can easily be procured. One grain of $Mn_2Os_5K_2$ annihilates one grain of morphin. It should always be diluted to the utmost possible degree. The second indication is to destroy the morphin contained in the circulating blood through hypodermic injections of the antidote—again as well diluted as possible. The third indication is to decompose the alkaloid that returns from the circulation to the stomach. This is accomplished by giving the patient by the mouth, from time to time, weak solutions of the potassium salt, say one grain to a tumblerful of water. No coffee or other liquids—nothing but weak permanganate solutions should enter the patient's stomach. Such a plan of treatment will not fail to bear gratifying results, and these in turn will tend to hasten the general acceptance of that important therapeutic truth, that potassium permanganate is the antidote to opium, its preparations and alkoloids.

Very respectfully yours,

William Moor.

103 West Fifty-eighth St., New York,
April 20, 1895.

"AMERICAN DYSPEPSIA."

To the Editor of The Medical News,

Sir: While I was a medical student in the United States nothing attracted my attention more than the great number of sufferers from gastro-intestinal catarrh. Indeed, scarcely a day passed without meeting a victim of this malady.

First I meet a young man, about twenty years of age, in fact in the prime of life, suffering with headache, epigastric distress, or pain after eating, and regurgitation of a sour fluid. He is weak and emaciated, and even tired of life. Then I see a woman with a melancholic expression and anemic countenance, seated before a physician in a hospital, narrating to him the woes and miseries that follow the taking of food. She seeks relief from "heartburn" and nausea, asks for a narcotic that she may get a good night's rest, even begs for a drug that will renew her strength. To the doctor such complaints are common, and he has readily diagnosticated the case as one of gastro-intestinal catarrh. Stimulants and fermentative agents, as hydrochloric acid, pepsin, or pancreatin, will be prescribed, and the patient instructed *not to eat any starchy food.*

I estimate that about one-seventh, or 15 per cent., of the cases treated in the out-patient departments of the hospitals in Philadelphia are cases of gastro-intestinal catarrh—such at least I found to be the case in three of the leading hospitals. At the Pennsylvania Hospital I found that among the 2112 patients treated during the year 1892 there were 240 cases of this affection. In the German Hospital 3504 patients were treated in 1891 in the out-patient medical department, among whom were 211 cases of the disease, and in the Jefferson Medical College Hospital, in the year 1892, there were 2983 patients treated, with 777 cases, making a total 8599 patients, with 1228 cases of dyspepsia. It is well to state that in these statistics I have not included those cases that were diagnosticated as cases of "entero-colitis," "diarrhea," "constipation," and "debility," most of which were associated with "indigestion." It is also well to state that among the non-dyspeptic cases were many who, while they had dyspepsia, did not come to the hospital to be treated for this, but for some other disease.

Why is it that such a malady exists among the people of the United States more than in any other country? Is it the climate? Is it the food? Or is it the undue time allowed for proper mastication? This has seemed to me the more reasonable supposition, and led me to visit some of the largest restaurants in the business part of the city on different occasions, and to study carefully the time that was devoted to mastication. Of one-hundred-and-fifty individuals of various ages I found that on an average twelve minutes and two seconds were devoted to breakfast, eleven minutes and forty-five seconds to dinner, and about eleven minutes to supper. About 40 per cent. drank coffee at breakfast, dinner, and supper, without taking any water.

To test the fact whether or not eleven minutes were sufficient time to masticate a restaurant beefsteak as it should be, so that the gastric juice may penetrate it, I succeeded in getting a young man seventeen years of age, and in perfect health, and with good, sound teeth, to eat such a steak in eleven minutes, after which a tablespoonful of mustard well mixed in a cupful of warm water was given him (not against his will), which produced vomiting, and the steak was brought to view. On examination I found many pieces of the meat fully an inch in length, and scarcely marked by the teeth. It is hardly necessary to state that the presence of such large pieces of food in the stomach will doubtless produce irritation, followed by inflammation, and hence finally bring about gastro-intestinal catarrh.

From the foregoing observations and experiment it can be safely said that at least 80 per cent. of the dyspeptics of American cities are reaping the result of incomplete mastication. They have forgotten that the stomach does not masticate, and that by devoting ten or fifteen minutes more to mastication of their food their lives would undoubtedly be prolonged as many years.

Incomplete mastication, I believe, is the main cause in nearly every case of dyspepsia, and hence for its cure strict orders must be given to each and every patient to take sufficient time to masticate each particle of food thoroughly. Drugs given to many dyspeptics do more harm than good, and so a prescription like the following is more often the recipe "par excellence:"

R.—Half an hour's time for breakfast,
One hour's time for dinner,
Half an hour's time for supper.

Very sincerely yours,
HAMMOUD MOUKADDIM, M.D.
MAUSSOURAH, EGYPT.

NEWS ITEMS.

The Ohio State Medical Society will hold its semi-centennial meeting at Columbus, May 15, 16, 17, 1895. An elaborate and interesting program has been prepared.

Medicine is the name of a new "monthly journal of medicine and surgery," published at Chicago, under the editorial direction of Dr. Harold N. Moyer.

Dr. James Kennedy, Professor of Pharmacy in the Medical Department of the University of Texas, died suddenly of nephritis on March 29th, at the age of thirty-two years.

Philadelphia County Medical Society.—Owing to the meetings of the American Medical Association and the Medical Society of the State of Pennsylvania, which fall this year upon May 8th and 22d, the regular meeting-days of the Philadelphia County Medical Society, the latter Society has substituted for these two meetings one meeting on May 15th, for which an extremely interesting program has been arranged.

The Nebraska State Medical Society will hold its Twenty-seventh Annual Meeting at Grand Island, Nebraska, May 21st to 23d. The following are the officers: President, Dr. H. B. Lowry, Lincoln; Vice-Presidents, Drs. J. E. Summers, Jr., Omaha, and W. B. Ely, Ainsworth; Secretary, Dr. George Wilkinson, Omaha; Corresponding Secretary, Dr. W. R. Lavender, Omaha; Treasurer, Dr. W. M. Knapp, Lincoln; Committee of Arrangements, Drs. J. Lue Sutherland, W. B. Hoge, M. J. Gahan, all of Grand Island. A cordial invitation is extended to the regular medical profession of Nebraska to attend the meeting.

Successful Autoplasty.—The *Medical Press and Circular* relates the case of a man who had lost his nose, in the place of which there existed a large and hideous opening. Attempts had been made to replace the missing part by plastic operation, by transplanting a flap of skin from the forehead, and by grafting a newly amputated finger, but without success. Finally it was concluded to use a finger of the patient, which was trimmed and placed in the wedge-like opening made in the forehead-flap to receive it, and here it was kept for a month or two with the aid of a plaster-of-Paris bandage. Ultimately good union took place between the finger and the adjacent structures of the nose. Then the finger was amputated in easy stages and its extremity rounded off with a skin-flap. The ultimate result was altogether satisfactory. This same operation was performed a year or two ago, if we remember correctly, by Dr. J. P. Parker, now of St. Louis, Mo.

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ORIGINAL ARTICLES.

LEAD-PALSY IN CHILDREN.

BY LEO NEWMARK, M.D.,
OF SAN FRANCISCO, CAL.;
PHYSICIAN TO THE SAN FRANCISCO POLYCLINIC.

SINCE Dr. J. J. Putnam, in his contribution to Keating's *Cyclopedia of the Diseases of Children,* about four years ago, commented on the apparent rarity of lead-palsy in children and the desirableness of more material with which to test certain conclusions suggested by the facts already published, there have been but scanty additions to the literature of the subject. Stieglitz,[1] writing in 1892, was hampered in an important argument by the lack of records concerning saturnine paralysis in children. Dr. Wharton Sinkler reported three new cases in THE MEDICAL NEWS of last year, but was unable to add any published cases to those comprised in Putnam's table. Putnam himself, however (in a note in the *Boston Medical and Surgical Journal* of February 23, 1893), mentioned another case that had been reported by Sinclair White.[2] The patient in this instance was a girl, aged eight years, who was poisoned by drinking-water. Besides a faint blue line she presented "paresis of the extensor muscles of the hands and of the flexors of the feet. The latter, owing to pointing of the toes, compelled the patient to lift the feet high off the ground."

The following briefly reported cases are all I have been able to glean from the records: Brown,[3] of Bacup, observed a child, aged four years, with a dark-blue line on the gums, severe colic, obstinate constipation, painful micturition, and marked anemia. It had tremor of the legs, and this was followed by paresis, and ultimately paralysis. Recovery was slow.

Oliver's book[4] contains the account of a girl, over three years old, who had received daily from early infancy a small quantity of botanic beer which was carried through forty feet of lead pipe. She was very anemic, had a blue line on the upper gum, could not talk or even walk well, and there was "a good deal of staggering as in locomotor ataxia." The knee-jerks were absent. This child died in a few months of convulsions.

Despite the meagerness of the descriptions, the implication of the nervous system in these cases is evident, and they may at least serve to illustrate that proneness of the lower extremities to suffer which has been observed in other instances.

A case of Oppenheim's, reported by Anker[1] may not be relevant, as the paralysis could not be attributed to direct lead-poisoning, but was considered to be probably hereditary saturnine palsy, the father of the patient being a compositor and having suffered repeatedly from lead-colic, but not from paralysis. The daughter became mentally weak after sustaining an injury to the head in her third year. At about the age of seven years progressive weakness of both lower extremities set in; when examined a year later there was paralysis of the extensors of the feet and toes, except the anterior tibial muscles; in the course of the next six months this exception disappeared, and there was also degenerative paralysis of the muscles supplied by the radial nerve, the supinator longus and triceps escaping, and of some of the intrinsic muscles of the hand. Subsequently considerable improvement took place in the condition of the upper limbs, but none in the lower, and the calf-muscles were also slightly implicated. In his commentary on this case Anker observes that lead-palsy of the lower extremities is rare, and that the order in which the lower and upper limbs were affected differs from the usual sequence. While these statements are true as far as adults are concerned, the study of lead-palsy as it occurs in children has hitherto resulted in the conclusion that what Anker deems exceptional would seem to be the rule in these cases. This conclusion is, at least partly, confirmed by the following case which has been under observation at the San Francisco Polyclinic since the 27th of January, 1894.

The patient is a girl, now eight years of age. During a considerable period preceding her first visit she suffered repeatedly from disorders of the stomach and bowels, which were treated as attacks of ordinary "indigestion." In November, 1893, she was again seized with vomiting, constipation, and pain in the abdomen; her breath was very foul, and she could retain nothing in her stomach but milk and lime-water. On the first of December she took to her bed, and two weeks later her mouth became very sore; her medical attendant states that "she was suffering with the worst case of aphtha he ever saw." The girl left her bed on the 23d of December,

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[1] Archiv für Psychiatrie, Bd. xxii.

[2] British Medical Journal, 1890, i, p. 18.

[3] Unsuspected Lead-poisoning in Children. British Medical Journal, 1890, i, p. 177.

[4] On Lead-poisoning, p. 177.

[1] Berliner klinische Wochenschrift, 1894, p. 577.

1893, but on first attempting to walk she fell; soon, however, she regained more control over her legs, so that she was able to walk. While still confined to bed the position of her hands and her manner of grasping objects attracted attention.

It was at first declared that the girl had had no opportunity of coming in contact with lead; but inquiry easily elicited the information that the crib in which the child slept had been painted in the summer or fall of 1892 with a mixture of paints containing white lead; it had not been varnished. This covering of paint was very slow in drying, requiring, indeed, many months to do so, and the patient used to scratch it off with her finger-nails.

In January, 1894, the patient was found to be anemic, but not emaciated. On the upper and lower gums there was a well-marked blue line. The second dentition was in progress, and a small quantity of tartar had formed on the teeth. There was bilateral wrist-drop. On the right side all the muscles supplied by the radial nerve were paralyzed, except the triceps and supinator longus; on the left side the triceps, supinator longus, and abductor pollicis longus were preserved. Fibrillary twitchings were absent, but a jerky tremor was observed. The triceps-reflex was present in either arm. Sensibility was intact. The affected muscles gave the complete reaction of degeneration.

The patient was able to walk, but she occasionally stumbled, owing to her failure to clear the ground completely, for there was bilateral ankle-drop. She could, however, extend the proximal phalanges of the toes quite well. This extension of the toes was the only movement she could execute with the muscles supplied by the external popliteal nerve. The anterior tibial muscle was affected like the others. The knee-jerks and ankle-jerks were normal. The plantar reflex was faint in either foot. In response to faradic and galvanic excitation of the external popliteal nerve only extension of the toes occurred. This effect was produced also with either current by applying the electrode at the ankle midway between the malleoli, or (less readily) on the dorsum of the foot; but the contraction thus produced was rather sluggish. Direct faradization of the muscles of the lower leg gave a negative result—the constant current elicited the reaction of degeneration. Various muscles of the upper arm, shoulder, and thigh reacted to the tests in a normal manner.

Improvement soon began in the upper extremities, and by the middle of April, 1894, the patient had regained the use of her hands. It was not until the end of June that a tendency to improvement was observed in the legs; since then progress has been steady but slow, and recovery is not yet complete. At present (over a year after the onset of the palsy), while all the muscles of the forearms contract perfectly to voluntary impulses, the electric reaction of those which have been affected is still abnormal. Their responses to indirect and especially to direct stimulation are more or less feeble, the diminution of irritability being a little greater in the right forearm than in the left, but they show no modal changes.

Dorsal flexion of the feet is still defective, and the tendency to assume the equinovarus position is noticeable, although there has been a great amelioration in their condition. The toes can be strongly extended. The muscles of the lower leg respond to excitation of the external popliteal nerve with moderate faradic and galvanic currents, but an increase in the strength of the current is not followed by a corresponding increase in muscular contraction. The direct irritability of the muscles is greatly diminished—that of the peronei more than that of the others. Extension of the toes may be produced in the same manner as formerly. Segments of the blue line are faintly discernible on the upper and lower gums.

Putman[1] says concerning lead-palsy in children: "In every instance that the writer has found described or seen, the legs have been affected as much as the arms, or more, as in paralysis from alcohol and arsenic, the symptoms generally appearing first in them." The foregoing case again illustrates the liability of the lower extremities to suffer. The supinator longus escaped in the upper limbs; but the tibialis anticus, which usually escapes when the legs are involved, was affected. In none of the available records of cases relating to children was it clearly stated that this muscle had escaped.

The preservation of the power of extending the toes is noteworthy. This function devolved upon the short common extensor. No sign of action in response to the will or to electricity could be distinguished in the long extensor; the point over the ankle whence the extension of the toes was provoked is the motor point of the branch of the nerve supplying the short common extensor. This muscle is a more powerful extensor of the toes than the long one, the latter, according to Oppenheim,[2] being chiefly a dorsal flexor of the foot, besides raising its outer border and abducting it. I have not found mention elsewhere of this functional integrity of the short common extensor of the toes in cases of lead-poisoning implicating the external popliteal nerve. The sluggish contraction to both currents indicates, however, that this muscle did not entirely escape the action of the poison.

As the patient was confined to her bed at the onset of the paralysis, the trouble in the legs probably remained unnoticed for some time, and it cannot, therefore, be determined whether the lower extremities were affected before the upper, as seems to be the rule in children. Sinkler's patient, Sarah McD., presented in her first attack an example of this precedence, and three of the cases in Putnam's table exhibited the same order of progression. It is nowhere mentioned that the palsy appeared first in the arms.

It will be observed that, although the arms and the legs were equally affected, functional recovery took place much earlier in the former than in the latter. This occurred also in two of Chapin's cases and in one of Sinkler's. It does not appear from the literature, as far as it is accessible to me, that in any case the disorder has persisted in the muscles of the upper extremities after complete recovery of the lower.

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[1] Keating's Cyclopedia, vol. iv, p. 626.

[2] Lehrbuch der Nervenkrankheiten, pp. 24 and 25.

Stieglitz, in his experimental researches, succeeded in producing saturnine paralysis in animals, but failed to obtain the type characteristic of lead-poisoning in the human adult. Adopting the suggestion of Moebius, that excessive use of a group of muscles may determine the localization of the palsy, Stieglitz concludes that localized paralysis must not be expected in animals, as no special group of muscles in them is subject to a particular strain; and he adds that children, being comparable in this respect to animals, the localization of their paralysis is just as likely to be atypic; and Putnam,[1] remarking that it is as common to find paralysis of feet and legs as of arms in children poisoned by lead, says: "The natural conclusion is that in childhood the influence of greater and more complex use has not made its appearance to increase the susceptibility to disease of the neuro-muscular apparatus of the upper extremity."

Now, the assumption that lead-palsy in children follows no type is erroneous; the special tendency of the extensors to suffer is about as marked in them as in adults, the localizing influence, however, predominating in the lower extremity. This predominance seems well established; yet it does not necessarily follow that the upper limbs in children are less susceptible than in adults, but rather that the lower are more so. Is this to be ascribed to "greater and more complex use" of the child's foot?

The theory of the relation of muscular function and the selective action of lead has been employed chiefly to explain certain deviations from the ordinary type of paralysis, such as have been observed in file-cutters, for instance; it does not seem to suffice for typical cases in which the neuro-muscular apparatus has not been subjected to excessive exertion.

THE VALUE OF BIMANUAL SIMULTANEOUS EXAMINATION OF SYMMETRIC STRUCTURES.

BY LOUIS FAUGÈRES BISHOP, A.M., M.D.,
OF NEW YORK CITY.

THE perfect man should be ambidextrous. The left hand should be able to perform, and with nicety, every motion that the right can perform. In medical work there is a distinct advantage in being able to use both hands alike, and in having their sensibility and perception equally trained. This is not a difficult matter if the student recognizes its advantage early in his career and makes all his examinations first with one hand and then with the other. It very often happens that a good deal of danger from infection is avoided by being able to avoid in an examination the use of a finger that has been scratched or injured. To the ambidextrous man this comes to be done almost without thought.

Of course, there is no need of argument as to the value of bimanual examination in the usual sense—that is, with one hand upon one part of an organ and the other hand upon another part. There is another kind of bimanual examination that is of a good deal of value for quick and accurate diagnosis of surgical conditions. It depends upon the symmetry of the body and upon a co-ordination of movements between the two hands of the examiner. How close this co-ordination is in performing symmetric movements is best illustrated by taking a piece of chalk in each hand and drawing a symmetric figure, the right hand drawing the left half of the figure, and the left hand the right half. A good system of examination of surgical conditions is as follows: Place the patient in a perfectly symmetric position, so that one-half of the body is as nearly as possible in the same relative position as the other half. Standing directly behind or in front of the patient, place one hand upon the part to be examined, and the other hand upon the corresponding healthy structure and palpate corresponding portions with each hand. For instançe, in a case of suspected injury of the shoulder one stands directly behind the patient, and, starting with acromion processes, with the right hand upon the right shoulder and the left hand upon the left shoulder, each part of the healthy shoulder is palpated and compared with the corresponding part of the injured shoulder. By this means the sound part of the body is used as an anatomic model to refresh and furnish anatomic information at the instant when required; and the information so acquired has this advantage, that it is accurate for the patient in hand, and this cannot be true of any general description. It goes without saying that we must be on our guard not to be misled by the slight differences that exist between the right and left sides of all people, but in general the right and left sides of the same individual are more nearly alike than the right sides of two separate individuals.

Manual skill in examinations of all kinds is worthy the immense amount of labor and patience that is necessary for its attainment. One should examine healthy structures every day and whenever the opportunity offers. For not only is attention required to attain skill in physical examination, but labor is necessary to maintain it when acquired.

56 WEST THIRTY-FIFTH STREET.

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[1] Boston Medical and Surgical Journal, February 23, 1893.

CLINICAL MEMORANDA.

A CASE OF APPENDICITIS IN A MAN SEVENTY-TWO YEARS OF AGE, IN WHICH THE PUS HAD FOUND ITS WAY THROUGH THE ABDOMINAL WALL AND WAS EVACUATED; RECOVERY.

BY L. J. HAMMOND, M.D.,
OF PHILADELPHIA, PA.

THIS case represents one of the few happy terminations of perityphlitic abscesses, and strongly emphasizes the fact that Nature makes desperate efforts to restore to health tissues that have been the seat of inflammatory exudates by furnishing an outlet as well as a dam to prevent general infection.

J. E., aged seventy-two years, had the ordinary diseases of childhood; he had pneumonia at twenty-one, since which time he has been perfectly well until about the middle of September, 1894, when he began to suffer, without any apparent cause, severe pains in the right inguinal region, increasing in severity for several days, as he stated, then subsiding until October 9th, about three weeks after his initial attack, when my brother, Dr. Wilbur C. Hammond, was called from the Philadelphia Dispensary to see him. The symptoms at this time were localized tenderness, with a mass in the right iliac fossa; abdominal tympany; the legs retracted; the bowels obstinately constipated; a heavily coated tongue; a rapid, running pulse, with a temperature of 103°. He ordered magnesium sulphate in dram-doses every hour until the bowels were freely moved. I was asked to see the patient the next morning. At this time I found the belly distended with a large accumulation in the right inguinal region. I at once advised operation, since there was clearly an accumulation of pus; the case was anything but promising, as the man was almost moribund; there was extensive cellular infiltration of the entire abdomen; the urine contained a small amount of albumin, which I thought was more likely the result of a general infection of the system than from any actual disease in the kidneys themselves.

An incision one-and-a-half inches in length was made over McBurney's point, which was directly over the large boggy mass; after going through the skin, fascia, and muscles, at least a pint-and-a-half of very offensive greenish pus was evacuated. The cavity was then thoroughly irrigated, and the finger passed through the incision led into a track directly into the right iliac fossa; the appendix, however, could not be found, unless it was represented by the small particles that were so plentiful in the pus, but no extensive search was made for it, as there seemed to be a distinct canal, with a strong lymph-wall thoroughly closing it off from the general abdominal cavity, and serving admirably as a drain from the very bottom of the abscess. After again thoroughly flushing the track a gauze drain was inserted, the abscess-cavity packed with iodoform-gauze, and granulation allowed to take place from the bottom. The condition of the patient during the operation was such that repeated injections of strychnin and digitalis were given; after the operation, for twenty-four hours, whisky and milk, with hypodermics of strychnin, constituted the only treatment. The abscess-cavity was cleansed and repacked every second day for a week. The convalescence was slow but most satisfactory, the temperature and pulse returning to normal six hours after the operation, and the temperature never rising above 99° during the entire stage of convalescence. Both the tympany and the edema of the abdominal wall subsided in twenty-four hours after the operation. The old man is at this date, now six months after the operation, in excellent health.

STAB-WOUND OF THE HEART.[1]

BY LARKIN W. GLAZEBROOK, M.D.,
OF WASHINGTON, D. C.

MY attention has just been called to an article which appeared in THE MEDICAL NEWS, October 27, 1894, by Dr. J. R. Church, of Washington, D. C., entitled "Gunshot-wound of the Heart." A short time before reading his paper I reported to the District of Columbia Medical Society a case of stab-wound of the heart, with specimens.

As operations have been performed with success upon the heart in such a serious set of injuries as from gunshot-wounds, I am sure the chances for success are far greater in simple incised wounds. Our journals often contain notes with reference to the length of time a patient will survive wounds to such an important organ as the heart. We also have been taught the sad lesson that non-interference in such cases means death to our patients. Now, with these two important points before us, I cannot see why operators are so slow in giving the patient the only chance for his life by surgical interference.

C. J., thirty years of age, colored, of powerful physique, was admitted to the Freedmen's Hospital, February 5, 1895, at 12.30 A.M. Upon examination by the surgeons, an incised wound was discovered one inch above the left nipple, three-and-one quarter inches to the left of the median line, the incision being two-and one quarter inches in length, and its direction being parallel to the third rib. The man's general condition was pronounced "fair," and the wound was examined. It was impossible to trace its depth further than the third rib, although probing was resorted to; it was, therefore, considered a simple wound, and dressed accordingly. Twelve hours later symptoms of internal hemorrhage were noticed, and at 8 A.M., February 6, 1895, the man died. The patient had survived the injury thirty-two hours. I was called upon in an official capacity, and three hours after death performed a necropsy. The stitches being removed and the wound enlarged, I followed its direction downward to the third rib. I then removed the rib and found an oblique incision, three-quarters of an inch in length, through the cartilage-end of the rib. It was with difficulty that I could separate the incision, it having closed immediately upon the withdrawal of the instrument. A similar wound was next found in the pericardium, and upon examining the heart I found a clean incised wound half an inch in length directly into the right ventricle, the endocardial wound being three-eighths of an inch long. Both the pericardium and the left pleura were distended with fresh blood and large clots. Later, after passing three superficial sutures through the incision, I tested the cavity with fluid and found it to be sufficiently repaired.

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[1] Specimen and paper presented to the District of Columbia Medical Society, February 16, 1895.

The important feature in this case was the inability to make a diagnosis, the cartilage-wound being the only wound into the thoracic cavity, and this closed tightly upon the withdrawal of the instrument, preventing even the escape of blood and also misleading the surgeons in their subsequent examination. The case, however, will exemplify the importance of carefully examining all wounds in the neighborhood of such important organs, even though externally they may appear trivial. With a patient in as good condition as this one was upon his admission into the hospital, there is no question that if an operation had been performed at once, living, as the man did, for thirty-two hours, his life might have been saved. I have reported this case with the hope that it may impress upon those who see such cases, first, the great importance of a careful diagnosis; and, second, the belief that if such a wound be sutured life will be saved.

VICARIOUS MENSTRUATION FROM THE BREAST.

BY JOSEPH L. HANCOCK, M.D.,
OF CHICAGO, ILL.

AN unnatural escape of blood or secretion from some part of the human organism at the time of the regular menstrual flow, other than that from the uterus, has often been recorded. It may take place from the mucous membrane of any part of the body, or from an organ, or the pressure on the circulation may give rise to an unnatural increase of a natural secretion. If the rupture of capillaries ensue in any organ during the proper time for the menstrual flow, this discharge (anabolic surplus) replaces normal menstruation, and is termed vicarious menstruation. Thus, bleeding from the nose, or hemorrhage from the lungs or stomach, may take place in some individuals, while a serous diarrhea is not uncommonly another phase of this phenomenon. Intimately connected as the breast is, in a nervous sense, with the uterus, vicarious discharge of blood from this organ is rare. I report herewith a case coming under this head.

An otherwise healthy, large, Englishwoman, thirty-one years of age, one-year-and-a-half after the birth of the youngest child (now ten years old) commenced to have a discharge of fluid from the left breast three days before the time of the regular period. As the fluid escaped from the nipple it became changed in character, passing from a whitish fluid to bloody and to a yellowish color respectively, and suddenly terminating at the beginning of the real flow from the uterus, to reappear again at the breast at the close of the flow, and then lasting two or three days longer. Some pain of a lancinating type occurred in the breast at this time. The patient first discovered her peculiar condition by a stain of blood upon the night-gown on awakening in the morning, and this she traced to the breast. From an examination it appeared that a neglected lacerated cervix during the birth of the last child had given rise to endometritis, and for a year the patient had suffered from severe menorrhagia, for which she was subsequently treated. At this time the menses became scanty, and then supervened the discharge of bloody fluid from the left breast, as heretofore mentioned. The right breast remained always entirely passive. A remarkable feature of the case is that at any time some escape of fluid occurs from the left breast during coitus.

As a possible means of throwing light on this subject it may be added that the patient is unusually vigorous, and during the nursing of her two children she had more than the ordinary amount of milk (galactorrhea), which poured from the breast constantly. Since this time the breasts have been quite normal, except for the tendency manifested in the left one under the conditions given.

MEDICAL PROGRESS.

Idiopathic Rupture of the Heart.—COLLINGS (*Lancet*, 1895, No. 3738, p. 987) has reported the case of a man, fifty-three years old, who had lived a temperate life, and had been troubled only by dyspepsia and a weak heart. There was no history of rheumatism or rheumatic fever. The man's father had died suddenly of heart-disease. After feeling out of sorts for a time, the man experienced severe pain in the precordium and felt too ill to leave his bed. He gradually became worse and sick after food. Speech became thick, the mouth was drawn to the right, and the right eye was partially closed. The left arm became paralyzed, then the right leg. The tongue deviated to the right on protrusion. The sphincters were unaffected. The heart-sounds were faint and without added sounds. The man was moved to a water-bed, his body and head being kept horizontal, and great care being taken to avoid sudden movement. Later, when his pelvis was raised to allow the introduction of a bed-pan, almost instantaneous death ensued. Upon post-mortem examination prolonged and careful search failed to reveal any microscopic change in the brain, its vessels, or the meninges. On opening the pericardium it was found to be filled with blood-clot, and on washing this away a laceration about one-and-one-half inches in length was found in the left ventricle; the aperture was closed by a recent clot. The cavities of the heart were dilated, the walls thin and in an advanced stage of fatty degeneration. There was no valvular disease. The aorta and its main branches were atheromatous. Both lungs contained calcifying tubercle; the abdomen was loaded with fat; the spleen was soft; the kidneys were engorged, but otherwise healthy.

Neuritis from Carbon Monoxid.—At a recent meeting of the Liverpool Medical Institution GLYNN (*British Medical Journal*, No. 1788, p. 759) related the case of a boy, sixteen years old, who had been confined to bed for five months, and was quite unable to walk. He was an engine-cleaner, and worked in a shed where twelve engines were cleaned every night. In this shed was a furnace, and the boy had to carry red-hot coals to start the engine-fires, the engines taking four hours to get up steam, and he often found the fumes from the fires very irritating. His illness began with pains in the calves of the legs, followed in a month by dyspnea on exertion and swelling of the legs. The urine became albuminous, and all power in the lower extremities was lost. On coming under observation the muscles of the legs were found to be weak, especially the extensors of the feet. There were tenderness of the muscles and loss of faradic irritability, with some loss of sensation and paresthesia. The knee-jerks and plantar reflexes were absent, and there was marked spasm of the gastrocnemii. The number of blood-cells and the amount of hemoglobin were normal. Improvement rapidly followed the administration of potassium iodid and the application of hot fomentations to the legs. The patient became able to walk fairly well, though the extensors were weak and the knee-jerks absent.

Gangrene of the Lips during Convalescence from Typhoid Fever, with Staphylococcus-septicemia.—Spillmann and Etienne (*Le Mercredi Médical*, 1895, No. 13, p. 145) have reported the case of a man, forty-nine years old, in whom during convalescence from a mild attack of typhoid fever the lips became involved in a firm diffuse swelling, most marked at the left corner of the mouth, and followed by gangrene. The tongue likewise was the seat of several superficial erosions. It was evident that all were due to the irritative action of several carious and partially destroyed teeth. The area of splenic and hepatic dulness was increased. The irritating teeth were extracted, but the temperature remained elevated, and the gangrene progressed, until finally death ensued. Upon post-mortem examination the lungs were found to be edematous, and the right was the seat of an infarct as large as a mandarin. The pericardium contained an excess of fluid, while the myocardium was soft, friable, and pale. The kidneys were enlarged and pale and contained many superficial infarcts. In the intestines, particularly in the neighborhood of the cecum, were pigmentary remains of previous ulceration almost completely cicatrized. In cultures from the spleen, kidneys, and liver made after death, staphylococci aurei developed.

Excision of the Elbow-joint for Fracture of the Internal Condyle of the Humerus, with Posterior Dislocation of the Bones of the Forearm.—At a recent meeting of the Philadelphia Academy of Surgery Dr. H. R. Wharton presented a woman, aged thirty-five years, who fell, sustaining an injury of the right elbow, which was diagnosticated as a dislocation with fracture of the condyles of the humerus. Upon examination of the arm six months later marked deformity was found in the region of the internal condyle of the humerus, with a posterior dislocation of both bones of the forearm, the arm being rigidly fixed at a right angle, and the patient complained of constant pain in the elbow.

Excision of the elbow-joint was advised and performed as the operation most likely to give a useful arm.

It was found that there had been a fracture involving the internal condyle of the humerus, and that the ulna and radius were dislocated backward; a large amount of callus had been thrown out, which made the operation a difficult and tedious one.

The patient did well after the operation; the wound healed promptly, and at the end of four weeks the patient had a fair range of motion in the new joint, remarkably free flexion and extension of the arm, also good supination and pronation.

Cerebral Tumor Mistaken for Paretic Dementia.—Clark (*Journal of Nervous and Mental Disease*, 1895, No. 5, p. 273) has reported two cases of tumor of the brain presenting symptoms of paretic dementia. In one three gummata were found after death in the right anterior cerebral lobe; in the other, multiple sarcomata of the dura.

THERAPEUTIC NOTES.

The Treatment of Gonorrhea with Zinc Stearate.—Miller (*Philadelphia Polyclinic*, vol. iv, No. 17, p. 174) recommends zinc stearate in the treatment of gonorrhea. The use of this preparation in this affection was first suggested by the peculiar advantage it has of becoming closely intimate with any mucous surface upon which it is placed, thus permitting the more thorough action of the zinc, of which it is an active compound, as of other therapeutic agents with which it may be combined. As it is relatively insoluble, the difficulty of its local application was overcome in the following manner: A straight glass tube of suitable caliber and length was prepared with lateral openings at short intervals at one extremity, while the other was slightly funnelled. The smaller openings were then closed with carbolated petrolatum, and the tube thus made was filled with zinc stearate, preferably in combination with menthol. The bladder having been emptied, the urethra was carefully cleansed with a weak solution of hydrogen dioxid and the glass tube introduced and passed through the penile urethra. By means of a plunger, which can readily be prepared by wrapping cotton on a probe until it fits the tube, the tube can be emptied by withdrawing it from the urethra while the plunger remains in the same relative position. The result is a urethra fully packed with the zinc stearate. The procedure is scarcely painful, and the influence of the menthol is to allay the subsequent slight irritation. The meatus being covered with the usual piece of absorbent cotton, the patient is instructed to abstain from passing urine as long as possible, and the usual directions as to diet, etc., are given to him. The relief experienced by the patient is striking and immediate, and it has rarely required more than three or four applications, at intervals of a day, to secure entire relief.

Gallicin is the methyl-ether of gallic acid, and is prepared by heating a methyl-alcoholic solution of gallic acid or tannic acid with hydrochloric acid gas or concentrated sulphuric acid. It crystallizes from methyl-alcohol in rhombic prisms and is precipitated from hot water on cooling in the form of snow-white fine needles. The latter constitute the preferable form for therapeutic employment, and dissolve readily in hot water and in warm methyl-alcohol and ethyl-alcohol, as well as in ether. Both forms melt at a temperature of from 200° to 202° C.

Mellinger (*Correspondenz-Blatt für Schweizer Aerzte*, 1895, No. 8, p. 230) reports the employment of the agent in more than two hundred cases of various forms of catarrhal and phlyctenular inflammation of the eye and superficial forms of keratitis, with favorable results. It proved especially useful in cases of catarrhal conjunctivitis, particularly those attended with chronic swelling of the mucous membrane and slight or viscid secretion and complicated by an eczematous condition of the margins of the lids. The remedy was used in the form of a powder, which was dusted once or twice daily upon the diseased surface. In a few cases the application was followed by a feeling of burning, which disappeared, however, after the application of cold affusions, and which could be avoided by the previous instillation of a few drops of a 2 per cent. solution of cocain.

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SATURDAY, MAY 11, 1895.

"AND YET IT MOVES."

IT was observed by a great historian that we easily overlook the incessant progress in human affairs, but if the interval between two periods could be suddenly annihilated, the contrast between the changed conditions would be evident. In this spirit we may find it worth while to compare notes as to the progress of some sanitary reforms which have been taking place of late years.

The gospel of cleanliness and individualism has made several advances of late, thanks to the extension of our knowledge of the nature of infection and the manner of its conveyance. A most interesting evidence of the influence that purely scientific research may have on the opinions of the laity is shown in the recent approval in Pennsylvania of a law to do away with the practice of kissing the Bible on taking an oath. The law wisely prohibits the kissing, requiring that the hand of the witness shall be placed upon the open book. It is to be hoped that the reform thus inaugurated will be still further developed by a frequent turning of the pages and by an occasional renewing of the book, the used copies being destroyed.

The practice of using separate communion-cups seems also to be growing in favor. Much hostility was promptly shown to this reform when it was first advocated. One well-known minister said that as long as people were drinking impure water they should not complain of possible uncleanliness in the common cup, a singular argument, or, rather, want of argument, for why a community should delay one reform because others could not be secured is past all guess. It was surprising, also, that some medical journals should have opposed the reform, when medical editors, of all men, are most familiar with the evidence that much serious infection is communicated through the use of personal articles in common.

These events are earnests of further reforms, and much good will come of a general recognition of the importance of segregation in human affairs. Much disease must be propagated in schools, for instance, by the natural tendency of children to use things in common. In some schools the use of slates has been abolished. These are objectionable because of the constant use of saliva for cleaning them. Some time ago the question of clay modelling was considered in reference to its sanitary aspects. In many schools motives of economy lead to the working over of the same mass of clay many times, and thus the chances of exchange of infection become very great. Contagious diseases often exist in such a light form that no suspicion of them is awakened, but the lightest cases are capable of producing the most severe attack in another individual. The children of our public schools are of unequal social states, and many come from very unclean homes. Every effort should be made to prevent the use of any article in common, and if clay modelling must be practised—and it is doubtful if it is needed as a part of the common-school education—each child should have its own supply of material, and even this should be renewed from time to time.

Such reforms may be opposed, but will come in time. The world may seem to stand still, "and yet it moves." No gospel needs to be preached more forcibly than that of cleanliness,—not mere efforts at neatness or order, but actual cleanliness in the prevention of distribution of all forms of refuse and effete matters. It may be even hoped that we shall some day get rid of those who spit on car-floors and carpets, who throw waste paper and garbage on the streets or permit sewage to flow into running streams.

SOCIETY PROCEEDINGS.

AMERICAN ACADEMY OF MEDICINE.

Twentieth Annual Meeting, Held at Baltimore, May 4 and 6, 1895.

(Special Report for THE MEDICAL NEWS.)

FIRST DAY—MAY 4TH.

DR. JAMES W. WALK, of Philadelphia, read a paper entitled

THE LIMITS OF THE PHYSICIAN'S DUTY TO THE DEPENDENT CLASSES.

He said that the extraordinary development of the physical sciences in the present century has so broadened the field of medical study that no one can cultivate it all, and specialists become a necessity. Many members of the profession to-day have become wholly engrossed in scientific work, to the neglect of other duties. It is important to remember that we are not only pathologists and therapeutists, but also men and citizens, with the privileges and responsibilities appertaining thereunto; and with an added duty because of our special knowledge. *Noblesse oblige* is the motto of all aristocracies, as much so that of knowledge and brains as that of birth or wealth; hence the physician should be a teacher of preventive medicine. This duty to the community can be performed without any undue sacrifice of time or labor. There are also many other kindly and neighborly services that the physician gladly renders to those suffering from accident or overtaken with sudden disease. Beyond is the wider field of so-called charitable work, nine-tenths of which is rendered to the dependent classes—those burdens of every modern community.

In almost all the almshouse infirmaries and public hospitals maintained by taxation the medical services are rendered without pay, and this is wrong. They are a part of the protective system of the community, and the physician should no more donate his services than the merchant his wares. Coming to those institutions supported by voluntary contributions, we find that they have, in some instances, developed beyond the real needs of the community. Thus, in Philadelphia, investigation shows that 30 per cent. of the inhabitants receive free medical attendance, and other statistics show that the actual pauper class does not exceed 1 per cent. If this is done for charity, it is a mistaken kindness; if for selfish purposes, it does not accomplish what is desired. Some time ago an examination was made into the professional history of twelve physicians who enjoyed large and lucrative practices; nine had devoted themselves exclusively to private practice from the start.

No adequate remedy has been found up to the present. Provident dispensaries, monthly payments, etc., have been tried with but little success. If the circumstances of every patient were investigated by competent agencies, as the charity-organization societies, the evil would be, to a large degree, prevented. The opposition to this plan comes from the physicians who desire large clinics. The enormity of the evil may be a sign of hope; a revulsion of sentiment may follow, which will enable the reform to be made. To this end we are to labor sincerely, earnestly, and persistently.

DR. W. L. ESTES, of South Bethlehem, Pa., read a paper entitled

HOSPITAL MANAGEMENT.

Hospitals, he said, were divided into (1) those connected with or forming a part of a university; (2) public hospitals, so-called; (3) church hospitals; (4) endowed hospitals. To determine the actual management of the hospitals of the United States a visit was paid or a letter sent to most of the larger hospitals in the country, and from these a composite statement was given, showing the usual management of the American hospital.

The proper conduct of a hospital requires a dual management—that which relates to the patients, their care and cure, and the purely executive, or business, side. While they are mutually interdependent, it would be possible for the medical board to manage the executive side, but a board of trustees, composed of never so excellent laymen, could not carry on the scientific side. Hence it would seem that there has been a transposition of the relative importance of the boards, and, if either ranked the other, all should give way to the conclusions of the medical board.

In many instances the board of managers are, practically, responsible to none but themselves, and the executive committee usually controls the board, constituting the real power. It was suggested that the members of the executive committee ought not be eligible for re-election, and their term of service should be limited to one year. Any member of the board failing to do duty when on the executive committee should be removed from the board. The oversight of the board of charities should be made a real one, and a competent accountant should audit the books for the board of charities yearly.

The superintendent is the connecting link in this dual management, and is usually a layman. It was suggested that a physician was more fitted for the position, or the position of superintendent and surgeon-in-chief could be given to the same person, with a steward capable of managing all the details of the care of the hospital.

The medical staff usually has not an equal voice in the management of the hospital, and this is wrong; it should be equal in power and influence with the board of trustees, and appointed by the same appointing power. The service of the visiting staff, instead of, as is usually the case, having a term of months, should be continuous throughout the year. As this will take more of his time, the attending physician should receive some compensation for his services.

The purpose of a hospital is, primarily, the ministration of charity. If the undeserving are able to receive help, they are likely to assert themselves and crowd out the really deserving; hospital rivalry is an incentive to this condition. It is possible to have too many hospitals. Pennsylvania has 6595 beds in its hospitals, or one to every 797 inhabitants. The average daily number of beds occupied during the year covered by the last report of the State Board of Charities was 4240—that is, over 2000 beds were unoccupied every day during the year. In Philadelphia there is one hospital bed for every 332 of its inhabitants, with an average of 1587 unoccupied beds every day in the year. When, besides, it is remembered that most of these hospitals have an out-door department, the conclusion is reached that we have too many hospitals; and the effect of the over-supply is to encourage the treatment of those who should not be the recipients of charity. The custom of seeking a hospital for prolonged or serious ailments is increasing, and must enhance the desire to secure hospital appointments, causing them to be accepted sometimes when the true dignity of the profession would suggest a declination.

DR. WALTER LYTLE PYLE, of Washington, D. C., read a paper entitled

THE EMERGENCY HOSPITAL, WITH A PLEA FOR MUNICIPAL GOVERNMENT.

He said that the emergency hospital occupies a unique position in the hospital world. It is an institution for the reception of recent cases when immediate medical attention is peremptory, and to accomplish this purpose best no other cases should be received. Such a hospital should be easily accessible and located on a street of some width, in convenient communication with a police station. There should be a sheltered driveway for the ambulance, communicating by large doors with a large, airy room (the emergency room), kept constantly in readiness for any operative procedure. An "emergency ward" should adjoin this room, and some padded wards for alcoholics, the acutely insane, etc., should also be found on this floor. For the ambulance-calls a system patterned on the fire-alarm is preferable. The ambulance should never go out without a surgeon fully equipped, and the ambulance-surgeon should be one of the more experienced of the residence force, preferably the first assistant. The chief resident should be a man capable of attending to any case that may be received, and he should have abundant and efficient assistants.

The administration should belong to the municipal authorities, having an advisory board of physicians and surgeons. This would obviate most of the friction with the public, the police, and the physicians, which is so constantly arising. The patient, being under municipal control, could often be saved from his friends. In the matter of the support of the hospital, the custody of criminals, and the transfer of patients to other hospitals, the emergency past, control by the city is desirable. It is frequently advisable to turn the patient over to the care of his family physician, even if he remain in the hospital, and this can be more readily accomplished in a city hospital. Then, too, the resident staff, being *attachés* of the department of public safety, would be of assistance to the court in their official capacity.

The question of publicity is one of importance. It should be remembered that the newspapers have rights, among them that to have information regarding accidents. At the same time, an exaggerated account of an injury works harm. It would be well for the chief interne to see the reporters and give them the proper information, or to post a bulletin to which they could have access. The police reporter's badge should give reporters the right to be admitted; should it be found that the privilege was being abused a letter to the editor would probably prevent any further abuse. It is better to err on the side of the reporter in furnishing news; at the same time the patient's requests and circumstances should be regarded.

As to complaints, they should be made in person and not by anonymous letters, and they should be investigated. The department chiefs and the consulting staff should compose the board of inquiry.

DR. EMMA B. CULBERTSON, of Boston, read a paper entitled

HOW TO REFORM THE DISPENSARY ABUSE.

She said that there is a widespread abuse of medical charity shown by the constant references in the medical journals, and this abuse is increasing in hospitals and dispensaries. Indiscriminate professional charity works harm: 1. To the patient, whom it pauperizes. 2. To the physician, as crowded clinics lead to slovenly work. 3. To the younger members of the profession, as it deprives them of proper experience. 4. To the profession at large, as these acts are misinterpreted by the community, and the dignity of the profession is lowered.

There is general agreement as to the need of popular education on the subject, although there may not be unanimity as to the cause and the remedy of this misconception, so that a little esoteric education may be desirable. It was held that the fault lies chiefly with the profession. Because of the moral reward for services rendered and the philanthropic tradition of the profession, physicians, as a class, have ignored their sociologic responsibility; even while the relief of suffering is a reward, no one has a right to receive that reward at the expense of the self-respect of the sufferer. While pleasing ourselves, we must remember the debt we owe to society. How shall we meet these requirements? The solution is found in sincere and hearty co-operation.

As the whole field cannot be treated at once, this paper proposed only the question, "How best to administer charity in public dispensaries?" In this work an endeavor should be made to secure four objects: efficient aid to the really needy; preservation of self-respect to those assisted; partial assistance to those in narrow circumstances; exclusion of the unworthy. In accomplishing these objects fraternal aid and countenance can frequently be given to the younger members of the profession. The sifting out of unsuitable cases gives more time for those treated, and the payment of a small sum by these is helpful to the patient; those who are found to be able to pay a diminished fee can be seen at the private offices. The sifting out of the improper cases is a complicated and delicate process, and should be given to a single official, or, better, to some organization for all the dispensaries in the city. This is done, in part, by the United Charities in Boston.

The plan pursued for a while by the New England Hospital for Women and Children was outlined as carrying these principles into effect. It was found that those who ought not to have come to the clinics either refused to sign the blanks or never returned. But the fact that the patient simply went to another dispensary, together with the additional labor of investigation, which was not given to a special officer as it ought to have been, caused the temporary abandonment of the plan. When it was found that a patient was able to pay even a reduced fee, by the use of a little tact he was, as a rule, persuaded to visit the office of one of the younger members of the profession who had shown by his work as an assistant, etc., that he was competent to take charge of the patient.

Would it not be possible for the profession to act as a unit in adopting some such method in our larger cities?

DR. GEORGE M. GOULD, of Philadelphia, read a paper entitled

HOSPITALISM,

which will appear in a future number of THE MEDICAL NEWS.

DR. BAYARD HOLMES, of Chicago, read a paper on

THE ECONOMIC ASPECTS OF THE HOSPITAL.

He said that the economic factor represented by medical charities is one often subtle in its influence and far-reaching in its complexity. The following propositions were considered:

The endowment of charities is unwise (1) because the conditions of the public need are likely to change—as they have done; and (2) because the great estates that endowments secure place the interests of the "charity" in opposition to the economic interests of the people for whom the charity is ostensibly established.

The charities are now a means of altruistic activity for the rich, who are usually egotistic. They furnish a method of buying indulgences from the public. They act as a sort of narcotic upon the public conscience, especially on the conscience of the medical profession. The charities make a lower standard of life in the workman's home possible, and thus, locally and temporarily, they are good investments to the exploiters of labor, allowing very valuable savings by the reduction of wages. Incidentally, contributions to them secure to contributors great relief from personal interest in servants and employés.

The charity-mongers established hospitals in order to make themselves an occupation, and use every possible device about which they can crystallize contributions.

The medical profession supplies medical attendance to these hospitals without pay and without the reasonable privilege of medical instruction in the hospital or the professional honorarium of adequate annual reports. This is an error for which the profession is alone responsible.

DR. LEARTUS CONNOR, of Detroit, Mich., read a paper entitled

DRIFTING—WHO, HOW, WHITHER?

He said that in its very nature, the medical profession is a fellowship of competent, honorable persons. This nature, long antecedent to the earliest historic times, compelled the profession to scrutinize the credentials of those seeking membership within its fold, and to expel those who had proved false to the guild's sacred trusts. The present written law of the profession of the United States is an addition to this old historic principle, and is of such recent birth that many now living were present at its delivery. The occasion for it was born of the notoriously incompetent and dishonorable individuals who had assumed sectarian titles. Because of their character, all sectarians were placed under the ban of the profession, and association with them regarded as derogatory to the medical profession. As time passed on, many of these sectarians became well educated and acquired an honorable reputation with large numbers of the people of the United States. It now became a question whether it was wise longer to exclude individuals from professional fellowship solely on account of their sectarian titles, when these titles had lost the flavor of the ignorance and incompetency which once disgraced them.

It is shown that in many directions the profession has been drifting from this modern written law to the more ancient and fundamental principle of the fellowship of honorable persons thoroughly qualified for practising the art of medicine. Thus, in such State universities as that of Michigan, the regular faculty teach those whom they know to be sectarian medical students; the New York State Medical Society has thrown aside all reference to any written law of professional association; many other large and influential medical societies have ceased to ask their members to conform to the written law of consultations. Large numbers of the medical profession choose their professional associates without reference to their sectarian names. Regulars and sectarians work side by side on boards of health, State and local. Even a committee of its own appointment reported to the American Medical Association in favor of so modifying the written law as to exclude incompetent, dishonorable persons without reference to their sectarian names. It was shown that this drifting was started and is kept moving by forces apart from any set of men; that it is a part of the social development of the nineteenth century; and that it points toward a truer fellowship of the intelligent and good in the medical profession; and that it moves toward the time when applicants for professional fellowship will be judged by their individual character, training, and life, rather than their sectarian names. It is believed that the profession is drifting toward the adoption of a law of consultations somewhat as follows: "Every physician shall be deemed eligible for professional consultation who has shown that he has had such preliminary training as enabled him to comprehend the study of medicine; has fully mastered the elements of medical science and art; has complied with existing laws respecting physicians, and who maintains an honorable reputation in the community in which he resides." Of these qualifications the physicians of his locality shall be the final judges. If these, who know him best, shall indorse him, then shall he be freely admitted to medical organizations and be eligible for consultations.

Dr. Connor's paper drew forth eloquent replies from Drs. Marcy and Holmes, and others, in which it was warmly contended that greater ease of entrance into the regular profession should be provided for physicians educated and practising as homeopaths.

DR. WOODS HUTCHINSON, of Des Moines, Iowa, read a paper entitled

THE ECONOMICS OF PROSTITUTION.

He said that reproduction is heaven's first law. "Be fruitful and multiply" is the first commandment in Genesis, and yet every religious or moral code has inveighed against the sexual instinct. It is hard to control; but, instead of being degrading, it is of the highest rank and holiest nature. Upon this foundation are built the whole of morality and the social instincts; the family is the nucleus of civilization.

And yet everything connected with the sexual instinct is tabooed in polite society. Modesty affects to ignore its existence. Boys and girls are kept in disgraceful ignorance of one of their most important functions. From this arise many forms of vice. The second evil influence of this denunciation and taboo is to destroy the feeling of obligation to bear children. Married men and women are either refusing or limiting their output to two or three. This is the fruitful source of prostitution, abortionism, onanism, and mental and moral degeneracy. Parents need training as well as children, and no man's or woman's education is more than half-completed without such education.

What, then, is the excuse for this ban which has been laid on the sexual instinct? Its excesses solely. To hear most sermons one would think that adultery, fornication, and prostitution were its principal results. Its beneficial results overbalance these a hundred to one. Even its excesses have their uses; they are a means of sterilizing or exterminating the unfit. This is especially true of prostitution. It has the earmark of a process of nature having existed from the earliest ages in every clime, under every religion (a part of the cult of many, in fact). It has been attacked with merciless severity, absolutely forbidden, crushed out, "regulated," and with only one effect: to cause it to flourish with greater vigor and wider effect. "Regulation" simply does not "regulate," but increases clandestine intercourse, lessens marriage-rates, lessens fear of arrest and of infection, and increases illegitimacy.

Prostitution is a huge garbage-dump, a sewer, a crematory. It draws into it women mainly of the lowest class or most degenerate impulses. It cuts short their life-expectation. It practically sterilizes them. Very few of them marry, and these are mostly infertile. Only a very small per cent. reform. The chief motives leading to this trade are idleness and love of dress and bad family surroundings. This class of women we can best spare. As to the men, if they get gonorrhea, they sterilize their wives by salpingitis; if syphilis, they either refrain from intercourse, or abortions result until the virus has run its course.

Dr. J. W. Grosvenor, of Buffalo, N. Y., presented a paper entitled

WHAT SHALL WE DO WITH OUR ALCOHOLIC INEBRIATE?

The term inebriate was applied to all degrees of inebriety, the difference between a moderate drinker and an inebriate being one of degree only. The proper care of the alcoholic inebriate is a problem whose solution has enlisted the earnest thought of many able and distinguished men from time almost immemorial. It is also important because of the amount of the alcoholic drink-bill, the death-rate from alcoholic inebriety, its causal relation to many diseases, the increased expense to the government from the arrests made for drunkenness, its influence on the increase of crime, and the malign legacy to posterity.

Alcoholic inebriates were classified as (1) moderate drinkers; (2) excessive drinkers.

Moderate drinkers include all those whose drinking-habits have not yet carried them to the point where the intellect and the physical system have become visibly affected, as shown by the conduct. Notwithstanding his moderation, the victim is daily poisoning himself with alcohol; he is an inebriate, and is suffering from the disease of alcoholic inebriety. The moderate drinker is neither a care nor a menace to the State. The total abandonment of the drinking-habit is all-important for this class of drinkers, and all reasonable methods that will aid to accomplish this should be adopted. In this matter the medical profession has an obligation that it should discharge with strict fidelity.

The anesthetic property of alcohol causes many a moderate drinker to be ignorant of the damaging effects until he has been using it for many years, when he may call a physician for a disease the result of the ingestion of alcohol; this is the time for the wise and humane physician to use his influence, to give advice, and to render assistance.

The excessive inebriate is generally the outgrowth of the moderate inebriate. He is a diseased, degenerated individual, belonging to the vast army of the defectives; a dangerous character, a constant menace to the welfare of the home and to the peace and good order of society. While at times he may appear to have physical health and mental soundness, no one can foretell when the alcoholic poison will dominate over him.

Many plans of treatment have been suggested for the excessive inebriate: some the product of ignorance, some the outcome of enlightened investigation. The inebriate will not receive the best treatment until alcoholic inebriety has been clearly recognized as a disease. Reference was made to the various suggestions for treatment, according as the condition was considered a disease, a vice, or a crime. The belief was expressed that the alcoholic inebriate is suffering from a disease, has adopted a vicious habit, and not infrequently commits crime. The early stage is too often neglected in the treatment until some of the more serious results have been accomplished. Hospital treatment is to be preferred to home treatment, and it ought to be prolonged until a cure is effected.

No case of drunkenness should be permitted on the streets, as no one can foretell at what moment the affected person is liable to commit an assault; all such should be immediately arrested and brought before a magistrate, who should submit them to examination by a medical commission. If the individual has committed no crime, he should be sent to an inebriate-hospital to remain until cured. If a criminal, and the medical examination determines that he is responsible, his incarceration should be in an institution in which he can receive proper treatment. The method usually in vogue of a fine and slight imprisonment neither reclaims the individual nor reduces the number of inebriates.

No good reason exists why the insane should receive more humane care than the alcoholic inebriate. The cost for erecting, equipping, and maintaining hospitals for the inebriate would be reimbursed to the State by the lessened expense now caused by the murders, suicides, thefts, arsons, accidents, disease, and poverty brought about by permitting the inebriate to run at large.

Dr. J. Madison Taylor, of Philadelphia, read a paper entitled

WHAT AGENCIES CONSPIRE TO CHECK DEVELOPMENT IN THE MINDS OF CHILDREN?

The paper was rich in valuable statistics, and represented a research-work of a high order of merit.

Dr. Reuben Peterson, of Grand Rapids, Mich., read a paper entitled

THE NEED OF MORE MEDICAL REFERENCE-LIBRARIES, AND THE WAY IN WHICH THEY CAN BE ESTABLISHED.

He made most useful suggestions as to the establishment of a working medical library in a small city, derived from actual experience in the successful founding of such a library at Grand Rapids.

The following resolutions were adopted:

WHEREAS, Membership in the Medical Corps of the Navy of the United States, from having been, through its high professional attainments, once eagerly sought by graduates of medical colleges, has ceased to be attractive to them, so that it is no longer possible to fill its vacancies; and,

WHEREAS, It is believed that this is due to the inferior rank given to entrants to the corps, and their assignment, when at sea, to quarters in the steerage, with the undergraduates of the Naval Academy and civilian paymasters' clerks, while the young medical officer of the army begins his career a grade higher and in the commissioned officers' mess; and,

WHEREAS, The professional requirements and qualifications, the professional duties and obligations of the medical officers of the army and navy are identical; therefore, be it

Resolved, That the attention of the Senate and House of Representatives of the United States be invited by the American Academy of Medicine to this inequality, and that the Naval Committees of the two Houses be urged to inaugurate such legislation as shall confer upon the officers of the medical corps of the navy the same status, pay, and emoluments as are now accorded to the medical officers of the army;

Resolved, That this resolution be printed, and copies of it, certified by the President and Secretary of the Association, shall be sent to the President of the United States, Secretary of the Navy, and to every member of the Fifty-fourth Congress.

WHEREAS, The Association of American Medical Colleges did, at its last meeting, establish a four-years' graded course for all colleges holding membership in that body; and

WHEREAS, There is a resolution before the Association delaying the initiation of this for four years; therefore, be it

Resolved, By this Academy that we urge upon all friends of medical education the immediate enforcement of the rule requiring four years of attendance before graduation in medicine, and that we recommend all State Boards of Health and other State licensing bodies that they make provision to secure the recognition of such colleges only as demand four years of attendance for graduates on and after 1899.

Resolved, That the American Academy of Medicine urges all States to create medical examining boards to conduct an examination of all persons desiring to practise as an essential procedure to obtaining permission to practise.

Resolved, That the President appoint a committee of three to codify the present laws and formulate a general law making the requirements the same for all the States, and report at the next meeting.

The following methods for reforming the abuse of medical charity were presented as the official utterance of the American Academy of Medicine to the medical profession:

1. The medical board should have predominating control in the policy of the hospital.

2. As statistics show that the number of hospitals and dispensaries is entirely out of proportion to the number of poor people requiring medical relief, it is considered to be to the best interests of the profession to discourage further multiplication of such institutions.

3. Hospital patients able to pay should not receive the professional services of the medical staff without a proper fee.

4. Each institution should have a special officer for investigating the financial condition of all patients.

5. All applicants for dispensary treatment should sign a statement of indigence, and give reference to some reputable person.

6. A small fee for medicine should be required unless a special certificate be furnished stating that the applicant is absolutely destitute.

The officers elected for the ensuing year are: *President*—Henry M. Hurd, of Baltimore. *Vice-Presidents*—Woods Hutchinson, of Des Moines, Iowa; John B. Roberts, of Philadelphia; Emma B. Culbertson, of Boston; W. F. Southard, of San Francisco. *Secretary and Treasurer*—Charles McIntire, Easton, Pennsylvania; *Assistant Secretary*—Edgard Moore Green, Easton, Pennsylvania.

SECOND DAY—MAY 6TH.

The President, DR. J. MCFADDEN GASTON, of Atlanta, Ga., read a paper entitled

RUDIMENTARY PREPARATION, COMPARED WITH HIGHER EDUCATION FOR SPECIALTIES, IN MEDICINE AND SURGERY.

He said that from the standpoint of the American Academy of Medicine the intellectual development that is gained in high-grade schools and colleges is an essential qualification for entering upon the study of medicine.

The attitude of the Association of American Medical Colleges and of the Association of Southern Medical Colleges has placed the preparatory literary qualification for entering upon the study of medicine upon a satisfactory basis, with the co-operation of the colleges in a uniform standard of requirement. A lack of good faith on the part of the medical colleges connected with these college associations in the enforcement of this literary qualification for matriculation is the only contingency attached to this regulation.

It has been shown that a classical education is essential not alone for the proper comprehension of the meaning of technical terms of Latin and of Greek origin, but also that the great benefits derived from a liberal education in improving the intellectual faculties, so as to enable the mind of the student to overcome the abstruse points involved in his researches, are of paramount importance.

The conclusion was expressed that, aside from a preliminary literary qualification, the study of medicine should embrace at least one year of instruction under a preceptor, three or four years of graded courses of six months each in a medical college, as requisite for the degree of M.D.; and for those intending to practise a specialty a minimum of one year's attendance upon a special course in a post-graduate school. Anything short of this program of studies for the medical profession must leave the student without proper equipment for his work, and bring him only chagrin and disappointment in entering upon the responsibilities of practice. If this ideal of thorough preparation for the duties of the physician and surgeon can be fully realized, the practitioner ought to be competent to solve the problems of pathology, diagnosis, and therapeusis upon taking charge of a case, and not expect to learn how to treat disease by his unfortunate experience at the bedside of his suffering patient.

Dr. Edwin Frazer Wilson, of Columbus, Ohio, read a paper entitled

IS THE RECITATION-METHOD OF TEACHING A SUCCESS IN MEDICAL COLLEGES?

The paper opened with a brief review of the development of teaching. At first, exclusively by lectures; then, after the use of written characters was introduced, it was possible to add the study of manuscript to the verbal teaching; and, after the invention of printing, when books became more general, the method of recitation from text-books was introduced. The medical teachers were the last to adopt this method. When medical schools were few and the teachers were the master-minds of the times, the lecture-method was superior; but now, when the number of medical schools has so greatly increased, and when all kinds and conditions of men aspire to the chairs, the old conditions do not apply, and the question arises whether or not it is best to adhere to the old methods.

As a text-book can be selected giving the teaching of the best medical minds of the times, is it not better to employ this, giving knowledge directly, than to filter it through the mind of a possible mediocre? Any one who has heard the lectures given in some of the smaller schools will appreciate the force of the argument. With the old two-years' course the recitation-method might not have been possible; not so in the four-years' course.

The following advantages pertaining to the recitation-method were given as the result of two-years' experience in its use: 1. The students do more and better work. 2. By using recent text-books the students receive the latest and best teaching of the master-minds of the profession. 3. There is no break in the method of study in the change from the college to the medical school. 4. A better preliminary education will be required. 5. It will, in time, cause the medical course to be regarded as a post-graduate course. 6. It enables the student to ask questions, and thus have obscure points made clear.

Dr. Perry H. Millard, of St. Paul, Minn., read a paper entitled

A PLEA FOR EFFICIENT MEDICAL LEGISLATION.

He expressed the opinion that the question of higher medical education in this country will not be settled until we have in every State "efficient medical legislation regulating medical practice."

Without legislation in the past the profession has become overcrowded, and schools of medicine exist far in excess of the demands of the public. It was contended that a majority of the colleges now existing are maintained to serve the personal interests of the respective members of the faculty, instead of existing to meet the needs of the public.

The essentials of efficient legislation were given as follows:

1. Rigid provisions governing preliminary entrance-examination.
2. The determination of the applicant's fitness to practise by examination in all branches of medicine.
3. The right to refuse or revoke licences for unprofessional or dishonorable conduct.
4. An adequate penalty for violating provisions of the act.
5. The appointing power to be invested in the chief executive of the State, with, by preference, a single board, with proportionate representation from different schools of practice.

The following table indicates the work of different Medical Examining Boards:

State.	Number examined.	Licensed.	Licence refused.	Per cent. licensed
Alabama . . .	647	558	89	86.2
Maryland . .	130	105	25	80.7
Minnesota . .	641	499	142	77.8
New Jersey . .	447	417	30	91 0
New York . .	967	798	169	82.5
North Carolina .	715	508	207	71.0
North Dakota . .	81	76	5	93.8
Virginia . . .	835	603	232	72.2
Washington . .	207	167	40	80.6
	4670	3731	939	79.8

Dr. De Lancey Rochester, of Buffalo, N. Y., read a paper entitled

THE PROPER TEACHING OF PHYSIOLOGY IN THE PUBLIC SCHOOLS AS A MEANS OF PREVENTING INTEMPERANCE AND VENEREAL DISEASE.

He said that the object of free instruction in the public schools of the country is to render individuals most fit for the performance of the duties of citizenship. "*Mens sana in corpore sano*" should be the motto of every department of public instruction; consequently the principles of hygiene should be put into practice from the very first. The correlation of studies ought not be overlooked, hence certain studies should precede the study of physiology. Thus the kindergarten group of nature studies, the study of plants and animals in connection with geography, the teaching of the similiarity of our lives with the lives of animals, an elementary knowledge of physics and mechanics, should come first. Contrary to the recommendation of the now famous report of the committee of ten, it was contended that physiology should be studied in the first high-school year and have a daily period for at least a year. The instructor should be thoroughly qualified: consequently a physician.

As physiology is ordinarily taught in the schools, no reference is made to sex; the result is that but a half-truth is taught, and this is wrong. Along with the teaching of the one function, the preservation of the individual, the other function, the perpetuation of the race, ought also to be taught. The great mission in life, to have our successors still better equipped than ourselves, should first be emphasized. Then should follow a general description of the body—too great attention to detail should be avoided. The maintenance of the physiologic balance between the income and the outgo follows, and then the great laws of the conservation of energy that pertain to our bodies. The process of digestion should receive full attention, and, from the necessity of rest for the glands, the evils of tobacco-chewing and gum-chewing can be shown. The study of the circulatory apparatus follows, and then that of respiration and excretion. Proper breathing and the use of water, both in the body and on the body, are studied at this point. Then follows the study of the nervous system and the organs of special sense. Certain hours are to be given to the study of foods and the evil effects of the commonly employed stimulants pointed out. But why this care of one's self? The study of the functions of the organs of reproduction leads to an answer to this question. All boys and many girls learn secretly and imperfectly about these things. How much better to teach them carefully and openly! Then it is learned that the perpetuation of the race becomes the highest reason for the preservation of the individual.

A paper on

EXPERT TESTIMONY,

by DR. HENRY LEFFMANN, was read by title.

The historic aspect of the subject was passed over with the allusion that expert testimony must have been required in the earliest period of jurisprudence. The term in its widest sense embraces every form of testimony in which skill or technical knowledge is involved, but in this paper it is considered in the aspect of medical testimony, though it was pointed out that in some other departments, notably in engineering fields, the criticisms on the character and principles might be more severe than those bestowed upon medical testimony. Quotations from various judicial decisions were brought forward to show the unfavorable opinions of experts held by lawyers and judges, and especially a recent decision of the New York Court of Appeals condemning the action of some physicians who gave opinions as to the nature of an attack of illness of which they had no knowledge except from hearsay, although these opinions involved the gravest responsibility in the case of trial for murder. The Court took occasion to denounce such testimony, and to state that it exhibited the utter worthlessness of the opinions of professional men when influenced by a large pecuniary stake. Reference was also made to a recent decision that an expert cannot collect more than the statutory witness-fees when no agreement for additional payment had been made, and when the witness has merely been called on short notice to attend court.

In view of the grave objections brought against experts, both as to competency and as to honesty, medical literature, and especially American medical literature, presents frequent discussions as to the remedy. The most common suggestion is the appointment of State experts, and reference is frequently made to the systems in vogue on the Continent of Europe, but there are several objections to those methods. The jurisprudence of Germany, and France especially, is more autocratic and less humane than that of England and the United States, and the rights of the prisoner under the Constitution of the United States compel the courts to submit the State's experts to cross-examination and to allow experts in opposition. The unseemly so-called "war of the experts" would not be avoided by this method. At the present time it is not likely that the medical profession in this country could furnish a sufficient number of competent experts to fulfil the manifold duties that would arise in the criminal work of the various cities and towns. The installation of a large body of such persons would greatly increase the evils that now affect our political life and do harm to the medical profession by introducing still more largely than at present the solicitation for political office. It is true that the governments of the Continent of Europe are not free from corruption, but the official life is not plunged into the vortex of politics so thoroughly as it is here. Under any circumstances it must be remembered that medical work is so specialized at the present day that a rather numerously composed board of experts would be needed for each judicial district.

The propriety of establishing courses of instruction in medical jurisprudence and State medicine was urged. It was pointed out that, although these topics are on the list of each medical school in the United States, the work is superficial and often nominal. It was suggested that the fourth year of the medical course might be arranged to include an optional course, thorough and practical, leading to a special degree or certificate. Thus in time a class of qualified experts would be secured available for the purposes of jurisprudence.

AMERICAN MEDICAL ASSOCIATION.

Forty-sixth Annual Meeting, Held at Baltimore, Md., May 7, 8, 9, and 10, 1895.

(Special Report for THE MEDICAL NEWS.)

GENERAL SESSION.

FIRST DAY—MAY 7TH.

The meeting was called to order at 10 o'clock A.M. by the President, DR. DONALD MACLEAN, of Detroit.

Rt. Rev. William Paret, D.D., Bishop of Maryland, offered the opening prayer. Addresses of welcome were made by Hon. F. C. Latrobe, Mayor of Baltimore, and Dr. Samuel C. Chew, Chairman of the Reception Committee. Dr. Wm. Osler, Vice-Chairman of the Committee of Arrangements, announced the program and invited all members to register.

Then followed the address of the President of the Association, DR. DONALD MACLEAN, his subject being

A FEW LIVING ISSUES AFFECTING THE HISTORY OF MEDICINE, AND WHAT BECAME OF THEM.

He considered questions that have attracted the attention of the profession during the period of his own cognizance. The first alluded to was the use of "chloroform as an anesthetic," which was introduced by James Y. Simpson. Simpson and his followers strenuously advocated the innovation of administering chloroform, not only in surgery, but also in labor. In the face of the greatest antagonism from the profession, the laity, and the church, Simpson remained undaunted in his teaching, and eventually the dispute was settled advantageously to humanity and creditably to him. He further contended for the judicious use of the anesthetic in cases of puerperal, infantile, and other forms of convulsions. The courage, determination, and faith required to gain this great battle for science and humanity in the face of such tremendous odds furnish one of the most brilliant examples of a well-earned and priceless victory to be found in the annals of medicine.

A graceful compliment was paid to Queen Victoria, who, with "a reasonable and well-grounded confidence in her doctor," submitted herself to this new and as yet almost untried obstetric expedient, although every conventional influence opposed, and the great ecclesiastic organization of which she was and is the temporal head held up a warning finger to restrain and deter her from carrying out her determination of becoming a party to so startling and revolutionary a proposition, and thus determining once for all the happy and victorious solution of this great and burning scientific issue. What reason and argument and strong contention well-nigh failed to accomplish, the brave action of a confiding and gentle woman made easy and certain.

In 1859 Darwin's work, *The Origin of Species*, appeared in London. Looking back and contemplating the effect of this book, one is forced to admit that it constituted a turning-point in the history of science. Like the wand of the magician, it shed new light and inspired fresh hope along every highway and byway of scientific endeavor. Foremost among its luminous influences was one of profound biologic significance, affecting all our previous conceptions of heredity. Heredity must always remain a prime factor in the etiology of disease. Its influence was also seen in the renewed application of the laws of heredity to medical science. Embryology became a matter of deepest significance. Teratology took rank as a science. Reversions in type began to be intelligible, strange growths were no longer viewed with wonder as *luses naturæ*, as sportive attempts of Nature to accomplish something strange, but were studied carefully with an eye to their classification.

The influence of Darwin on medicine can scarcely be exaggerated. Where is a better pathology of hernia to be found than in the *Descent of Man?* Dr. Hector McKenzie, in his recent studies of exophthalmic goiter, finds the cardinal symptoms of "tachycardia," "exophthalmos," "enlarged thyroid," and "muscular tremor," to be those of extreme terror. Darwin's explanation of the symptoms of terror is very suggestive. Men, during numberless ages, have endeavored to escape from their enemies or danger by headlong flight and violent struggling. Such exertion will cause the heart to beat rapidly, the nostrils to dilate, the breathing to be hurried, and all the other symptoms of extreme physical effort, the final result being prostration, pallor, and relaxation of muscles. "And now, whenever the emotion of fear is strongly felt, though it may not tend to any exertion, the same results tend to reappear through force of inheritance and association." If we imagine this condition of terror to become prolonged by failure of the nervous system to regain its balance, we then have a more or less complete picture of exophthalmic goiter. Thus, this disease may be the expression, by the unconscious memory of the individual, of some shock in an ancestor.

Another influence that must profoundly affect future medical thought is the theory of heredity propounded by Professor Weissmann, of Freiburg, which may be said to have arisen out of Darwin's work.

Almost contemporaneously with the important issues just referred to we find another that, involving issues of the utmost importance, was, from its nature, not so capable of prompt demonstration—namely, the revolution in the theory and practice of medicine that resulted in the abandonment of bloodletting and all concomitant so-called antiphlogistic expedients on which the profession had so confidently and comfortably anchored its faith from time immemorial. The change came gradually, but certainly. It was no mere chance, no haphazard change of fashion, no mere product of climatic or meteorologic influences; on the contrary, it was the rich and well-earned reward of intelligent, earnest, and persistent study and observation carried on in the spirit created and bequeathed to the scientific world by John Hunter and others of his type. Among the notable names associated with this issue not one stands higher than that of John Hughes Bennett, who, studying and intelligently interpreting the fundamental and essential phenomena of irritation and inflammation as seen by the microscope in the web of the frog's foot, the bat's wing, and other translucent tissues, had the genius and courage to turn his knowledge thus acquired to practical uses, and, disregarding the ancient and accepted sheet-anchors of antiphlogistic treatment, bloodletting, calomel, antimony, and so forth, determined to give the *vis medicatrix naturæ* a fair chance. Supplementing Nature's efforts with mild and supporting methods, he succeeded in reducing the mortality of pneumonia from 20 per cent. to less than 3 per cent. in the worst class of complicated cases, while in plain, uncomplicated cases the mortality was reduced from 20 per cent. to *nil* or thereabouts; and what was more important, he persuaded the whole medical world to pause and reflect.

About the same time, in the humble office of a poor and unknown physician in Alabama, and almost simultaneously in a small and comparatively limited and insignificant ward of the Royal Infirmary of Edinburgh, initial arrangements were wisely made in all scientific modesty and earnestness for the ultimate presentation of a marvellously important and beautiful scene in the great drama of practical medical science. In other words, by J. Marion Sims on this side of the Atlantic, and by Simpson on the other, with the support and assistance of their immediate allies and associates, the science and art now known as gynecology was conceived and rapidly matured. From very insignificant and unpromising beginnings this science has increased and grown, and in short passed through an almost marvellous evolution.

In this retrospective view of living issues in medical thought it would be impossible to overlook the important and inspiring one comprehended under the name of "the cellular pathology." The confident expectations at first held were doomed to disappointment, but is there a medical man anywhere who is not willing to pay sincere and loyal homage to the cellular pathology of Virchow, for its own sake as well as to its immortal founder and his school for all that it made possible in the advancement of pathology as well as biology generally.

Pasteur, Tyndall, Lister—the mention of these three names, familiar wherever the rays of modern civilization have penetrated, is all that is necessary for the purpose of introducing the ever-fresh and all-important "living issue" known as the "germ-theory of disease." From the time of Hippocrates down to the present moment the history of medicine will be searched in vain for another instance of the application of scientific facts and observations to medical theory and practice secured by patient, untiring effort that can for a moment be compared with this one. Starting with Pasteur's abstract, and, so far as practical medicine and surgery are concerned, one might almost say aimless experiments and observations, like a photographic negative, gradually but beautifully it has developed and grown, until the whole theory of the healing art has come to be thoroughly modified and colored by its influences.

It is out of the study of bacteriology and microbic pathology that modern medicine is slowly but certainly evolving one of her supreme triumphs. A great hope animates the noblest of all professions, that in all the so-called zymotic diseases immunity may eventually be conferred and the most disastrous agencies of human destruction may be deprived of their malignity through the sublime genius of man.

In any attempt to review the living medical issues of the last forty years it would doubtless be expected that reference should be made to the all-important one of medical education. The standard of medical graduation in the majority of schools to-day is something of which all may be reasonably proud. It must be admitted, however, that one-half of the American medical colleges are shamefully deficient in clinical resources and facilities, while the other half are no less devoid of the men and the means necessary to do anything approaching to justice in teaching fundamental branches, without which a reliable and intelligent knowledge of surgery and practice of medicine is an impossibility. It has long been a settled doctrine with many people that the highest duty, as well as the material interests, of these unilateral medical colleges, demands that they mutually agree that the efficient half of each shall be made more and more efficient, and that the feeble and farcical one be suppressed or transferred to that institution which may be best able to do justice to the subjects under dispute.

To many persons it has for some time appeared that the recorded and recognized results of our achievements give us the right to insist that the medical profession should receive from the people and the government of this country a practical and official recognition which would afford a fair opportunity for the adequate application of the principles of medical science to the needs of the community. A national Bureau of Health, superintended by a competent medical authority, who shall be a member of the Cabinet, could not fail to secure for the nation benefits beyond expression in dollars and cents. A united and dignified effort on the part of this Association and its allies ought to secure such an enactment. The establishment of a Bureau of Health as an integral part of the nation's executive will prove an efficient instrument in promoting the public welfare. It will be the means of unifying effort in the suppression of dangerous diseases. It will afford opportunity for restraining the effete despotism of the old world from adulterating our population with the vicious and degenerate. It will be a means whereby this enlightened and progressive republic may exemplify to the world the true mission of medical science. It will offer another agency for disseminating the truths of scientific discoveries; another means of discriminating between that which is transitory and accidental in medical achievement and that which is permanent and immutable; and it will furnish another promise that medicine in the future shall in no wise be unworthy of her past traditions.

A motion was made and carried that Congress be petitioned to increase the rank of the medical officers of the Navy to the same as that of the medical officers of the Army.

A motion was presented that a committee of three be appointed to confer with the Board of Trustees in regard to their annual report, and after much discussion it was laid on the table by a vote of 138 to 108.

A motion made by Dr. Bayard Holmes, of Chicago, relative to using proprietary and secret medicines was lost by an overwhelming vote.

The President requested the States in assembly to select their members of the Nominating Committee, and the meeting adjourned.

SECTION ON PRACTICE OF MEDICINE.

FIRST DAY—MAY 7TH.

The meeting was called to order by the Chairman, **DR. E. W. KELLOGG**, of Milwaukee, who delivered an address upon

RECENT ADVANCES IN THE PRACTICE OF MEDICINE,

commenting upon the striking changes in the last half-century. He gave a sketch of the preparation of antitoxin, briefly discussed sero-therapy, and closed with a plea for the segregation of diphtheria-cases.

DR. J. H. HOLLISTER, of Chicago, read a paper upon

NEW DEPARTURES IN THERAPEUTICS.

He dwelt upon the improved microscope and the perfected laboratory, which have worked such a revolution in the practice of medicine and made the struggle against disease something more than a purely defensive warfare, so that this closing end of the century may possibly begin a new era, from which will date, perhaps, the Renaissance of medicine. He divided the two methods of treatment into organo-therapy and sero-therapy. Under the former head he said that in some conditions, notably simple anemia, better results have been obtained by the use of bone-marrow than from arsenic, cod-liver oil, or iron. The use of nuclein, strongly recommended by many, and ably advocated by Prof. Vaughan, of Ann Arbor, is still on trial, and its value yet to be determined.

As to sero-therapy, the sequence of the germ-theory of disease, the most important announcement was that specific microbes isolated by culture are capable of causing specific disease. The most important fact in its practical value is that the germicidal power exists in blood-serum. Blood-serum from an animal that has become artificially immune to a certain disease may be transferred to another person so as to render him also immune, and the antitoxic effects can be greatly increased by repetition. In this connection diphtheria has received paramount attention, as the timely use of serum can more easily be made in this disease by reason of the local manifestations. The question that concerns us to answer is, Does the serum-treatment give results so favorable as to commend for it a place in our therapeutics? The consensus of opinion in Germany found expression four weeks ago at the Congress of Medicine in Munich. It was there stated that by the use of this method the mortality fell from 44 to 21 per cent. On the same occasion 525 injected cases were reported in which the fatality was reduced to 18 per cent. In July and August last, when the supply of serum failed, the mortality rose at once to 51 per cent. The general opinion seemed to be that the antitoxin is harmless and productive of good results, but the observations are as yet insufficient. There already seem to be, however, grave doubts as to its harmlessness.

Upon request, Dr. William E. Quine, of Chicago, discussed the paper, indorsing emphatically Dr. Hollister's remarks as to the use of bone-marrow in simple anemia, or even in apparent cases of progressive pernicious anemia. Dr. Quine had a case of splenic leukemia, in which the persistent administration of bone-marrow extract, extending over a period of several months, increased the red blood-corpuscles 17 per cent. and the hemoglobin 8 per cent. He stated that he had witnessed extraordinary eruptions upon the skin consequent upon the use of diphtheria-antitoxin; but, on the other hand, he had seen some very striking cures in apparently hopeless cases.

Dr. Summers, of New York, who for the past nine months has been exclusively experimenting on the subject of nuclein, promised the Section a stereopticon exhibition, prepared by one of the most experienced micro-photographers in New York.

Dr. W. Blair Stewart, of Atlantic City, N. J., read a paper upon

CALOMEL: A STUDY OF ITS PHYSIOLOGIC ACTION AND THERAPY IN GASTRO-INTESTINAL DISORDERS IN ONE-HUNDRED-AND-FORTY-FOUR CASES.

He strongly advocated the use of triturated calomel in small doses of from gr. $\frac{1}{10}$ to gr. $\frac{1}{5}$, which, in his experience, had apparently been able to produce bilious stools.

Dr. Hobart A. Hare, of Philadelphia, said that the sum total of the clinical observations recorded doubtless agreed with the experience of every physician. As to the statement that there is a possibility of a certain amount of calomel being converted into mercuric chlorid, the results of laboratory investigations have shown that calomel is not thus converted. It has been established that the amount which is changed into corrosive chlorid is infinitesimal, though on the other hand clinical evidence would seem to prove that it *is* converted into the bichlorid. It is unsettled whether calomel is changed by the alkaline juices of the intestine, and whether it acts as calomel or as mercury.

Dr. Elmer E. Lee, of Chicago, read a paper on

THE TREATMENT OF ASIATIC CHOLERA.

He maintained that there is no measure known to therapeutics of certain efficacy in this disease, and he gave a list of the successive remedies that had been confidently heralded, but had proved of small value. He advised the free use of water by the mouth to wash out the morbid products, and also by enemata. Dr. Lee exhibited an improved fountain-syringe, having, instead of the long irrigating tube, a hard-rubber nozzle with a large opening in its end, which gives a rapid and smooth flow. The water, being more flexible than any rubber tube, enters more readily into the tortuous twistings of the bowel. The most useful size has been determined to hold three quarts.

Dr. Hollister, who has treated cholera during at least four marked invasions in this country, stated that he had used with great success a solution of tannic acid and also cinnamon, these seeming to have a peculiar power in reducing irritations of the alimentary canal. Of late, several German experimenters have announced that both these remedies are markedly germicidal.

Section on Surgery and Anatomy.

First Day—May 7th.

The meeting was called to order by the Chairman, Dr. Joseph Ransohoff, of Cincinnati, who read an address entitled

CONCERNING STONE IN THE KIDNEY AND ITS OPERATIVE TREATMENT, WITH REPORT OF CASES.

Seven illustrative cases were detailed, and the following conclusions were formulated:

1. An absolute diagnosis of stone cannot be made. 2. Nephro-lithotomies must be divided into those of necessity and those of choice. In anuria and previous hematuria delay is fatal. 3. Pyuria and microscopic hematuria, as destructive changes, are positive indications for operative expulsion. 4. The oblique incision is to be preferred for the ease with which it permits the expulsion of the entire kidney. 5. Acupuncture is not to be relied upon. 6. Incisions should be made when the circulation is controlled by digital compression. 7. Incisions into the pelvis after expulsion and after removing a stone are to be avoided. 8. Primary nephrectomy for stone should be reserved for extreme cases. 9. Primary union by suture, when possible, makes nephrolithotomy a feasible operation. 10. Tight packing a kidney endangers the nerve-supply of the colon. 11. Nephrorrhaphy should form the closing act of every operation that has seriously disturbed the relations of the kidneys.

Dr. Howard A. Kelly, of Baltimore, read a paper upon

DIAGNOSIS OF URETERAL AND RENAL DISEASES IN WOMEN.

He dwelt solely upon some new methods of investigation that he has been actively developing during the past year, and considered three methods of diagnosis: I. Inspection. II. Catheterization of the ureter. III. Catheterization of the pelvis of the kidney itself.

I. Inspection in the ordinary examination, without incision, is limited to the ureteral orifices in the bladder, and in order to see them and to carry out the succeeding steps, to be described, it is necessary to expose them to view in the following manner:

1. The patient urinates.
2. She is placed in the knee-breast position.
3. A 10 per cent. solution of cocain is applied to and within the external urethral orifice of the urethra for five minutes.
4. The orifice is dilated, when necessary, with a single conical dilator up to nine or ten (these measurements always mean millimeters in diameter).
5. A simple cylindrical vesical speculum provided with an obturator is now introduced into the bladder and the obturator withdrawn, when the bladder at once balloons out with air.
6. The examiner, with a head-mirror on his forehead, now reflects into the bladder a light (preferably electric, held as near the sacrum as possible).
7. By turning the speculum thirty degrees to right or left and dropping the handle the ureteral orifice comes into view.

The inspection is limited to this area, and notes three things:

1. The appearance of the orifice and its surroundings. In inflammatory disease of the ureter or kidney this is often red, edematous, puffed out, mammillated, or even slightly ulcerated. In tuberculous disease descending from the kidney Dr. Kelly has seen the infection thickly strewed over a triangular area, with its apex at the orifice.

2. The character of the fluid seen issuing from the orifice will often settle the diagnosis and determine the plan of treatment. In cases of hematuria and pyoureter and pyelonephritis there is no difficulty in picking out the affected side and seeing, by the clear urine issuing from the other side, that it is sound. When no discharge takes place Dr. Kelly has started it by compressing a renal tumor bimanually.

3. The urine normally flows in intermittent jets of a clear, limpid fluid. If one side discharges in this way and nothing comes from the other, there must be some obstructive disease. Pus-accumulations, when they escape, are likely to flow in a continuous sluggish stream. Dr. Kelly laid emphasis on the important point that it is possible to catch the urine as it escapes directly in the speculum, and take it up for a microscopic, chemic, and bacteriologic investigation, without once passing a catheter into the ureter.

II. Catheterization of the ureters. To do this careful attention must be paid to aseptic details, which, in brief, are: 1. An aseptic speculum. 2. Cleansing the ureteral orifice with a pledget of cotton held in Dr. Kelly's mouse-tooth forceps. 3. A sterile catheter not contaminated by handling. 4. Avoidance of contamination of the catheter during the introduction. 5. Placing the sterile outer end (protected up to this time with a piece of rubber tubing) in a test-tube, to collect the urine as it flows from the ureter without contamination.

Dr. Kelly uses three kinds of catheters: First, and by preference, a flexible silk catheter, 30 cm. long and 2 mm. in diameter, which is engaged in the orifice of the ureter and pushed in for 12 or 15 cm., and left there to drain the ureter as long as desirable; second, a simple straight metallic catheter, which is more liable to bruise the ureter; third, a short metallic catheter, introduced entirely within the ureter and bladder, but discharging through the ureter by a fine rubber tube. Both ureters are easily drained at the same time with the flexible catheters.

By noting the time the catheter is put in and taken out the rate of flow is determined; and by the chemic, microscopic, and bacteriologic study the relative value of the kidneys is settled. The urea-estimation often differs so widely that it may be expressed by such a formula as this:

Right kidney = r.
Left kidney = l.
$r : l :: 3 : 10 :: 30 : 100.$

III. Catheterization of the kidney. For this Dr. Kelly has had made renal catheters 50 cm. long, which are kept sterilized in glass tubing, and when introduced are simply drawn out of the tubing as they are pushed into the ureter. In this way he has drawn pus out of a kidney, evacuating a large renal abscess, and by reversing things he has forced in solutions and washed out the pelvis, curing a pyonephrosis. Dr. Kelly promised to demonstrate at his clinic on the following day the evacuation of pus from the pelvis of the kidney.

Dr. W. K. Otis, of New York City, read a paper on

AERO-URETHROSCOPY, WITH THE EXHIBITION OF A NEW INSTRUMENT.

He claimed for the W. K. Otis aero-urethroscope the following advantages over other instruments:

1. For the purpose of making local applications under the direct control of the light. 2. A minimum distance between the eye and the urethral mucous membrane, hence a better and clearer view of the field. 3. Extreme lightness. 4. Simplicity of construction and moderate cost.

Dr. Ferd. C. Valentine, of New York City, read a paper entitled

MODERN URETHROSCOPY AND CYSTOSCOPY; CATHETERIZATION OF THE URETERS AND INTRAVESICAL REMOVAL OF TUMORS.

The paper was practically a demonstration of instruments. The first described was the Posner urethroscope, which is limited in use by its shortness. It is made in two forms—of glass silvered within and blackened without; one with the tube vertically cut off, and the other terminating obliquely.

It is lubricated preferably with glycerol and inserted into the urethra, and any moisture obstructing vision is dipped out with either metal or wooden applicators.

The Casper urethroscope is constructed essentially upon the same optic principles as are nearly all other instruments for urethral exploration. The tubes are of metal and longer than those designed by Posner. The objection to this instrument is that one has to be well instructed in its use.

The instrument that seems to cover all the requirements is the Nitze-Oberlaender urethroscope. It consists essentially of a battery, which provides light, urethral tubes of various calibers, and a light-carrier, which is inserted into these tubes.

In renal diseases the cystoscope is of surpassing importance. The opportunity for error in cystoscopy lies in the possibility of exaggeration. When the optic apparatus, which necessarily magnifies, is too far removed from the point or object under examination this appears enlarged. This fact may be advantageously employed in determining the character of a pathologic product or foreign body.

Catheterization of the ureters and the intravesical removal of tumors were also considered.

Dr. Homer Gage, of Worcester, Mass., read a paper on

MOVABLE KIDNEY.

He reported two cases, the first being one of double nephrorrhaphy and the second one of unsuccessful nephrorrhaphy, followed by nephrotomy. He stated that he could find but five instances like the first, and that the disability in this case was purely the result of pain in the region of the kidneys alone, and was entirely dependent, apparently, upon their mobility. This case was also unaccompanied by any of the other symptoms usually accompanying movable kidney. In the second case the failure of the first operation was due to faulty technique. A second operation was also unsuccessful. The nephrotomy was attempted with very great reluctance; but other experiences with this operation have proved successful when nephrorrhaphy has failed. Since the introduction of nephrorrhaphy nephrectomy for the relief of uncomplicated movable kidney has met with but little favor, suture of the kidney being easier and very much safer. Especial emphasis was laid upon two factors. First, the frequent association of movable kidney with a distressing neurotic habit (nephrorrhaphy being here unsuccessful); and, second, possible permanent relief by nephrectomy after failure of nephrorrhaphy.

A paper by **Dr. W. E. B. Davis**, of Birmingham, Ala., on

MOVABLE KIDNEY,

was read by title.

Dr. D. C. Hawley, of Burlington, Vermont, read a paper on

THE RADICAL CURE OF HYDROCELE.

The two methods in use are the injection-method and the method by open incision. The treatment by injection is open to a number of objections. The use of iodin is usually painful and attended with swelling and tenderness of the scrotum. The injection of carbolic acid is less painful and more efficacious. A strong preference was expressed for treatment by incision.

Dr. Donald Maclean, of Detroit, was decidedly in favor of the iodin-treatment, and referred to a surgeon in India who had cured 5000 cases by this method, and had never recorded a single failure; he said that he had himself cured a great number of cases by this treatment, and had never yet met with failure; that some of his patients had come by train from a long distance, and had returned immediately after the operation, without experiencing any serious difficulty.

Dr. Vance stated that he occupied a neutral position between Dr. Hawley and Dr. Maclean.

Dr. Gaston, of Atlanta, added his testimony in support of Dr. Maclean's treatment.

Dr. Rogers, of Kentucky, was in favor of injections of carbolic acid.

Dr. Hawley added, in conclusion, that the statistics showed that 20 per cent. of treatments by injection were not successful, and that when injection failed incision was to be recommended.

Dr. De Forest Willard, of Philadelphia, read a paper on

EXCISION, ERASION, AND AMPUTATION IN JOINT-DISEASE,

after which the meeting adjourned.

Section on Obstetrics and Diseases of Women.

First Day—May 7th.

Dr. Franklin H. Martin, of Chicago, Chairman, called the meeting to order and delivered an address entitled

SOME MOOTED POINTS IN ABDOMINAL SURGERY.

He dwelt first upon the treatment of fibroid tumors of the uterus, and laid emphasis upon the fact that as the surgical treatment of these new-growths is still a debated subject, this is itself the best proof that no one method has met the requirements of every case. Electricity he does not use so largely as he formerly did. When he encounters a large hemorrhagic tumor associated with profound anemia, marked pelvic pain, and peritoneal adhesions, with deranged digestive power and obstinate constipation—the worst cases the gynecologist meets—he uses galvanism as the most powerful tonic, astringent, and antiseptic at his command, and the best trophic stimulant. By this method he has been able to help many patients who had refused operation. Hemorrhagic cases near the menopause may also be relieved by this mode of treatment. He would not, however, voluntarily recommend electricity for a fibroid tumor in a woman under forty years of age or in one who was enjoying good general health. Galvanism does not do harm in these cases, other than in holding the patient away from more radical treatment. Dr. Martin believes that electricity is the most powerful antiseptic we have; the electrodes never carry germs as do needles or other instruments. It is true that a powerful current may cause rupture of a pus-sac into the abdominal cavity, but this is nothing less than an abuse of a valuable agent.

The removal of the appendages for fibroid tumors, Dr. Martin contended, has about run its course. In only a small percentage of the cases in which it is practised does the tumor altogether disappear, and in many cases there is no more than a slight diminution in size. In addition, the operation leaves the tumor in the abdominal cavity, with all of the anxieties attendant upon its presence. Hysterectomy is the rival of this operation. Dr. Robinson, of Chicago, removes the appendages, but also ligates the uterine arteries from above, thus practically performing a hysterectomy.

Vaginal ligation of the broad ligament avoids celiotomy. It is a minor operation in every sense of the word, except in its execution. The vagina is first incised at right-angles to the base of the broad ligament on either side. The latter is then ligated *en masse* to a sufficient depth to catch the uterine arteries with their main branches. In exceptional cases the ovarian artery may be included. The ligatures are cut short, and the vagina closed by a running suture. This operation may be employed with advantage in all cases of incipient fibroid tumor when a major operation is refused; it may be performed in hemorrhagic cases and in advanced cardiac and renal disease when a prolonged operation would be dangerous. It should never be substituted for hysterectomy when this is indicated, as in the treatment of a large intraligamentous fibroid or a fibroid associated with diseased appendages.

The treatment of the stump after hysterectomy is now virtually settled. Baer's method of hysterectomy has been very generally accepted. Senn's new "cuff" method, while keeping the pedicle in the abdominal cavity, connects the stump indirectly with the atmosphere, and thus exposes the patient to the danger of septic infection. The routine operation of the future must be one of minimum intensity, easy of performance, and good in effect.

Kidney-disease in hysterectomy should always be recognized and the stage of the disease noted. The specific gravity of the urine must be looked after, the condition of the heart noted, and the history of the case examined into. If renal disease be found, operation should be refused, and the patient placed upon a proper course of treatment, consisting of a non-nitrogenous diet and flushing of the excretory organs, for several days.

Abdominal drainage is no longer a mooted question. The only question now is when to drain and how. Drainage is indicated for the removal of blood from numerous oozing points, to control the bleeding and prevent subsequent sepsis; also, whenever pus or débris has been spilt into the peritoneal cavity, when extensive adhesions have been separated, or after any operation that calls for extensive flushing of the abdominal cavity. Dr. Martin prefers a glass tube, with the suction-pump. The gauze drain, he believes, acts as a tampon or plug, and the amount of work it is doing cannot be estimated. For extra-abdominal sutures Dr. Martin prefers catgut, which must be sterilized by heat and treated with chromic acid or methyl-blue.

THE TREATMENT OF FIBROID TUMORS OF THE UTERUS

was the subject for discussion.

Dr. Joseph Eastman, of Indianapolis, read a paper entitled

A METHOD OF SUPRAVAGINAL HYSTERECTOMY FOR GOOD OPERATORS AND BAD FIBROIDS.

He said that the problem of supravaginal hysterectomy is nearing solution. Anatomy from the book of Nature, and not the paper-books, should be the guide for the operator. The anomalies of the uterine arteries in cases of fibroid tumor must be borne in mind. He does not approve of mixing the abdominal and vaginal operation in enucleation of the uterus unless this be unavoidable. There are some cases of fibroid in which total enucleation is required. He then proceeds in his usual way, employing the vaginal rod for the purpose. He reported a case requiring such an operation.

Dr. Nicholas Senn, of Chicago, read a paper on

THE TECHNIQUE OF A NEW METHOD OF ABDOMINAL HYSTERECTOMY.

The dangers attending hysterectomy, he said, were shock, hemorrhage, injury to important adjacent organs, and septic infection. The operation now offered is intended to remove these dangers. Unnecessary handling of organs and loss of heat are the most active agents in the production of shock. The aim of the operation is to secure access to the myomatous uterus in as short a time and with as little exposure of the organ as possible. After incision, as in the ordinary manner, with ligation of the ovarian arteries, the uterus is brought to the wound. The peritoneum is then incised across the uterus, and the flap thus made is stitched to the parietal peritoneum. The opposite side is treated in the same manner. This cuff is readily made by means of dissecting-forceps and the hand. As soon as the cuff has been sutured to the lower angle of the wound, the remainder of the abdominal incision is closed. The tumor or tumors are then extirpated. This part of the operation can be accomplished within a few minutes, and the remainder proceeded with leisurely. The uterus is now amputated at the desired point. If the cervix be affected, the entire uterus can be extirpated in the same manner. The uterine arteries are then ligated by an indirect ligature. The arteries need not be isolated, but can be recognized and tied. Amputation is effected by an oblique incision so made as to form a cone of the uterus and a corresponding depression in the parts left. There is very little hemorrhage if the arteries be tied on both sides. After removal of the uterus the mucous membrane of the cervical canal is cauterized, and the uterus is closed by chromicized catgut. Two additional rows of buried sutures are then inserted to close the stump and thus arrest parenchymatous oozing. If hemorrhage occur at any time, the amputated surface remains in ready access for the next forty-eight hours. Adhesions need no longer be dreaded, because the enucleation is the same whether the uterus is adherent or free. If the operator be sufficiently careful to resort to the necessary antiseptic precautions, the only possible source of infection will be the hand or sponges. The wound, two or three inches long, with the stump of the uterus on the floor, is packed with iodoform-gauze. Temporary sutures are inserted. In from twenty-four to forty-eight hours later the gauze is removed and the wound closed. At no time is there any tension at the stump. If infection should occur after the operation, it is limited to the wound outside of the peritoneum. The crucial test of an operation is furnished by its results. In thirty-two or thirty-five unselected cases treated by this method, recovery ensued in all without untoward results.

Dr. C. C. Frederick, of Buffalo, read a paper entitled

VAGINAL LIGATION OF THE BROAD LIGAMENTS FOR FIBROIDS.

His paper was a combined record of vaginal and abdominal ligation. He queried, Why ask a woman to undergo the dangers of hysterectomy, if another not so dangerous operation can be performed with as good results? The operation of ligation of the uterine arteries was first practised by Dr. Franklin H. Martin, and his success prompted a trial of the method. Dr. Frederick had ligated in five cases, thrice through the vagina and twice from the abdominal cavity. In one case after the operation a fetid discharge occurred, with chills and fever. This was found to be due to a sloughing fibroid polyp, the symptoms disappearing when this was removed. Dr. Frederick claimed that there is no more danger attendant upon the operation considered than upon Emmet's trachelorrhaphy. If the fibroid is absorbed, is not this operation preferable to hysterectomy? The operation is also indicated for hemorrhage from a large flabby uterus not dependent upon displacement.

In the discussion that followed, Dr. Gordon, of Maine, stated that when a patient comes to him with trouble arising from fibroids of the uterus he always recommends hysterectomy, which he performs by a process that he believes to be entirely his own. He uses a continuous suture of catgut, and nothing else. He clamps off the tubes and ovaries and then introduces his suture, cutting as he proceeds. He then divides the anterior and posterior peritoneum and dissects down the peritoneum with the fingers and scalpel. He then passes down with a thread and needle and ligates the uterine artery, passing the needle through the loop. This is an extra-peritoneal, and yet an intra-pelvic operation. As a rule, no drainage is required.

Dr. A. H. Tuttle, of Boston, expressed the belief that total extirpation—removal of the cervix—is the better plan. If hemorrhage then occur, or merely oozing, the blood will leak out of the vagina and cause no trouble, and will not escape detection. There is also no danger of the development of carcinoma in the tissue left. The fact was emphasized that in making the abdominal incision care must be taken to avoid the bladder, which may be drawn up by adhesions.

Dr. Howard A. Kelly, of Baltimore, said that he has not yet given a thorough trial to the operation of ligation of the uterine arteries. He objected to the recommendation to take out all fibroid tumors found. He operates only when the patient is suffering from pus-tubes, pain, or pressure-symptoms. He thought Dr. Senn's operation represents a retrograde movement in the technique of hysterectomy. In his earlier operations he had done the same thing. He now drops the pedicle and has had but three deaths in one-hundred-and-three consecutive unselected cases. Dr. Gordon's plan will only answer in simple cases. In performing the operation Dr. Kelly ligates the ovarian arteries and the round ligaments, which always bleed; he then splits open the broad ligament on one side, goes down to the uterine artery of that side, which he ligates, and then rapidly enucleates the growth, cutting across the uterus without clamping. He then ligates the opposite side and rapidly concludes the operation.

Dr. Stone, of Washington, remarked that in all cases in which he used the strong galvanic current there had ultimately been a recurrence of the growth. He is afraid, also, when he ligates the uterine arteries that he may subsequently hear that some one in Philadelphia or Virginia has later performed hysterectomy on the same patient.

Dr. Charles P. Noble, of Philadelphia, said that he would remove every fibroid that was causing symptoms. He has seen within the past eighteen months five cases of fibroid tumors that have undergone malignant degeneration—in three sarcomatous and in two carcinomatous. He had not had good results with Martin's operation. Hysterectomy in his hands has proved less dangerous than ovariotomy. He did not think Dr. Senn accomplished anything by his operation. Dr. Kelly's method will save at least twenty minutes in the performance of the operation. Dr. Noble believed that in a short time the general mortality of hysterectomy will be less than 3 per cent.

Dr. J. M. Baldy, of Philadelphia, said that he would remove all fibroids that came under his hand, because he never saw such a tumor that did not give rise to trouble. An ovarian cyst would be removed as soon as discovered, symptoms or no symptoms, and so should a fibroid tumor. Ligation of the uterine arteries is just the same as Tait's method of castration. The means of effecting the cure in the operations are precisely the same. Collateral circulation will sooner or later be set up, and the tumor again begin to grow. If the abdomen be opened and the uterine arteries ligated, the operator might as well include the removal of the uterus. Dr. Baldy rarely sees shock, and does not fear it. Mere exposure of the peritoneum does not lead to shock. He was glad that no one has advocated complete extirpation. He believed this operation would be difficult. Dr. Kelly's method in his hands or in those of other expert operators is a good one, but it is a dangerous method for beginners. Dr. Baldy did not believe that it is good to tear the tissues in performing hysterectomy. He prefers to ligate and then cut. He joined with Dr. Kelly in regarding Dr. Senn's method as a retrograde procedure.

Dr. Dudley, of New York, expressed belief in applying the method to the case, and not the case to the method. He uses all operations in appropriate cases.

Dr. Senn said that his method was intended not for experts, but for beginners, and he offered it for fair trial.

Section on Neurology and Medical Jurisprudence.

First Day—May 7th.

The meeting was call to order by the Chairman, Dr. Daniel R. Brower, of Chicago, Ill., who, after outlining the work of the Section, spoke briefly of some recent advances in neurology and medical jurisprudence. He stated that Illinois was about to try the experiment of an industrial colony for epileptics on the plan of the Craig colony of New York. There is also a plan under consideration looking toward the improvement of medical expert testimony. The plan provides for the appointment each year of medical expert witnesses, who shall act when called upon in the respective branches in which their special knowledge qualifies them to speak with authority. The judge shall fix the fees of such witnesses, which shall not exceed fifty dollars per day.

Dr. William Lee Howard, of Baltimore, Md., read a paper on

HYPNOTISM: ITS USES AND UNCONTROLLED ABUSES.

He said that for insomnia he knew of no remedy equal to hypnotism. In dipsomania over 80 per cent. of the cases have been cured by the same means. In the drug-habits, the same good results have been attained. Hypnotism is also of value in nocturnal enuresis and acquired sexual perversion. In the congenital form of the latter it is without value. Hypnotism will invariably remove hysterical symptoms, but not the hysteria itself, as a rule, although it is invaluable in certain forms of hysteria. Hysterical subjects are, however, more difficult to hypnotize than others. In hystero-epilepsy good results have followed prolonged (several months) hypnotic sleep. Trial of the effect of hypnotic suggestion as a means of securing insensibility to pain in operations was advised before having recourse to an anesthetic. In Dr. Howard's hands persistent hiccough has been cured by this means. In insanity hypnotism has been found useless, but it has been of value in moral perversion.

The dangers of hypnotism were dwelt upon, and it was advised to limit by law its practice to legitimate physicians.

Dr. R. Osgood Mason, of New York, followed with a paper on

DUPLEX PERSONALITY AND ITS RELATIONS TO HYPNOTISM AND LUCIDITY.

Cases of duplex and multiplex existence were reported in detail. The belief was expressed that there exists a subliminal or second personality capable of becoming active under certain conditions. Clairvoyance is a manifestation of the subliminal self. Hypnotism means a calling of the condition into action.

Dr. T. D. Crothers, of Hartford, Conn., spoke on

HYPNOTISM IN THE MANAGEMENT OF INEBRIETY.

He maintained that the inebriate is a neurotic. The neuroses of inebriety are practically paralyses. After intoxication there is a period of psychic weakness, with a strong tendency to lean on any influence that will tend to assist in removing the habit. The brain turns to others for guidance. It is at this time that hypnotism is of the most value, although its power is rather limited in this affection. In institutions in which the power of the operator is constant hypnotism finds its greatest field of usefulness. The subject is new, and is to be settled by future experience.

DR. W. XAVIER SUDDUTH, of Minneapolis, Minn., read a paper on

THE PSYCHO-PHYSICS OF SLEEP,

in which he dwelt upon the close relation between normal sleep and the hypnotic state. He contended that most healthy people are light sleepers, and that few sleep soundly more than two hours. He thinks brain-rest may be secured without sleep, although relaxation is necessary. He described a sleep-center under the control of the vasomotor center. Sleep is induced either by exertion or by habit. Every time a nurse puts a child to sleep by singing or rocking she hypnotizes it.

DR. HUGH T. PATRICK, of Chicago, read a paper on

HYSTERICAL AMAUROSIS AND PSEUDO-MENINGITIS, WITH REPORT OF A CASE TREATED BY HYPNOTISM.

He referred to hysterical amaurosis as an hysterical anesthesia. Every symptom of meningitis may be simulated by hysteria, excepting the choked disc and the irregular pulse. The patient whose case was reported had a temperature of 100° F. and a pulse of 120; there were vomiting, constipation, severe headache, rigidity of the neck, and tenderness on pressure, together with total blindness and deafness in the left ear. Excepting the blindness and deafness the case looked like one of cerebro-meningitis. The attack began as an ophthalmic headache. The patient was cured by hypnotic suggestion. The fever was thought to be an hysterical manifestation.

In the discussion that followed DR. HIBBERD expressed it as his belief that no one could be hypnotized unless he was willing. He does not accept "hypnotism at a distance," spoken of by some authors. He thought the whole thing was a matter of suggestion, and not an influence of the operator over the subject.

DR. STERNE expressed the belief that hypnotism depends entirely upon the hypnotized and not upon the hypnotizer. He thought that the influence of hypnotism is more likely to result in harm than good, and he has given it up as a therapeutic measure, although he occasionally resorts to it as a diagnostic resource. It is not necessary to induce deep hypnosis. He would hold a person said to be acting under hypnotic influence equally responsible with any other person guilty of a similar offence.

GENERAL SESSION.

SECOND DAY—MAY 8TH.

The Permanent Secretary read the minutes of the previous session. They were adopted as read.

The visiting members of the American Pharmaceutical Association were welcomed and extended the courtesies of the floor.

DR. WILLIAM OSLER, Vice-Chairman, read the announcements from the Committee of Arrangements.

The Secretary announced the members of the Nominating Committee, after which DR. A. L. GIHON, of the U. S. Navy, presented an eloquent appeal from the Committee on the Rush Monument. He announced that the fund at present amounts to $3094.39, $3000 of which is invested in bonds and mortgages bearing 5 per cent. interest. This, he stated, represented an individual contribution of about three cents from the membership of the Association. He had recently seen handsome plans of a monument that is about to be erected in Washington in commemoration of Hahnemann. This, he urged, rendered it still more incumbent upon this organization to push forward to completion the work of the Committee. He suggested that the Committee be enlarged by the election of delegates from every State and County Association, who shall act as local chairmen for the reception of additional contributions. An appropriate monument could be erected for a price varying from ten-thousand to fifty-thousand dollars. The pedestal and site he guaranteed to secure through an appropriation from Congress.

A movement was made to secure the amount required for the furtherance of the work, and over $2200 was raised by voluntary subscriptions.

The Secretary in his report announced that the efforts that had been in progress to increase the membership of the Association had met with gratifying success. Nothing, however, had as yet been done in regard to the arrangement of the dates of meeting for the State societies, so that the latter should not interfere with the meeting of the National Association. The report was adopted as read.

DR. HENRY P. NEWMAN, of Chicago, the recently elected Treasurer of the Association, in offering his report for the closing year, suggested the expediency and necessity of changing the termination of the fiscal year from May to December, to obviate the uncertainty that prevails in the minds of many members as to the actual date to which to their annual dues had been paid. He also suggested that no stated salary be paid the Treasurer, but that he receive from the Trustees such sum annually as may be required for the proper performance of the work of the Association. He reported receipts for the fiscal year of $35,266.10, expenditures of $30,884.82, leaving a balance in the treasury of $4381.28. The report was adopted as read.

The Secretary announced that the committee appointed for the consideration of the advisability of organizing a Section on Orthopedic Surgery had reported adversely.

DR. WILLIAM E. QUINE, of Chicago, delivered the

ADDRESS ON MEDICINE.

His subject was

THE MALARIAL DISORDERS OF LARGE CITIES, WITH ESPECIAL REFERENCE TO CHICAGO.

He stated that it is a well-known fact that the conditions existing in large cities are inimical to the production of the malarial poison; also that irregular cases of malarial disorder are occasionally met with at all seasons of the year and in all localities. Very few cases of malaria originate in paved and sewered portions of the city, and the rare cases that do occur may be accounted for upon the assumption of limited foci of infection, as the upturning of the soil or a visit to a malarious district. Season, climate, and locality must be studied in every individual case. In many cases of malarial infection no reliable diagnosis can be made on the basis of their external phenomena; it can only be made by a microscopic examination of the blood. Some cases may arise from water-infection. This is a more rational and satisfactory explanation of the midwinter origination of malarial disorders in Chicago and other lake cities than any supposition in favor of "limited foci" of infection, which requires us to believe that frozen ground covered with frozen snow can belch forth miasm into an atmosphere whose temperature is below zero and stock that atmosphere with living malarial organisms. Dr. Quine reported thirteen cases of malaria originating in different portions of Chicago, and presenting certain striking features bearing upon the question of the source of infection, the diagnosis, and the limitations of the curative powers of our best anti-malarial remedies. The proofs of water-infection are quite as strong as those of air-infection, and there is not a doubt that impure water is responsible for the occurrence of paludal diseases with immensely greater frequency than is generally known. It is reasonable to assume that the malarial organism has no better life-prospects in the middle of a severe winter than it has at other seasons of the year. The assumption is incorrect that the failure of quinin to arrest febrile or other symptoms of disease is a demonstration that such disease is non-malarial. Without doubt thousands of cases of malaria exist annually in large cities without recognition.

SECTION ON PRACTICE OF MEDICINE.

SECOND DAY—MAY 8TH.

DR. FRANK S. PARSONS, of Philadelphia, read the first paper, which was entitled

SOME POINTS CONCERNING THE ETIOLOGY OF TUBERCULOSIS.

He contended that the almost universally accepted germ-cause of tuberculosis is quite secondary in its influence, and claimed that it was necessary for the development of tuberculosis that there should be an abnormal state of the system, which he termed a "pre-tuberculous condition." He stated that tuberculosis is in reality not a disease, but a symptom of lymphatic disturbance or stasis, this being proved by the analogy between lymphoma, or surgical tuberculosis, and tuberculosis of the lungs. Dr. Parsons summed up as follows: 1. Pulmonary tuberculosis should be considered as primarily due to a lymphatic stasis of congenital or acquired variety, depending on incompetency of excretory function and deoxidation of blood-cells. 2. The tubercle-bacillus should be regarded as a phenomenal expression of the disease, only because a favorable medium exists in the lymphatic stasis for its cultivation, and, hence, symptomatic rather than etiologic. Its development often takes place some length of time after the stasis is apparent, as evidenced by the so-called scrofulous condition existing in most tuberculous persons.

The great danger in considering the etiology of pulmonary tuberculosis lies in the fact that we are too prone to lose sight of the chemic composition of man, and the fact that disease is but a chemic decomposition, in the universal furore after a specific germ, the phenomena of which may be observed in various media in and outside the body.

DR. DE LANCEY ROCHESTER, of Buffalo, presented

A REPORT OF THIRTY-FOUR CASES OF PULMONARY TUBERCULOSIS TREATED BY THE METHOD OF CARASSO, OF GENOA.

Dr. Rochester quoted from the *Journal of the American Medical Association* an abstract of an article by Carasso, of Genoa, as follows: "The author believes that mentha exerts a direct bactericidal action upon the bacilli in the respiratory tract, and that by absorption into the circulation it acts as a general disinfectant. Creosote acts beneficially in pulmonary tuberculosis by increasing the appetite and favoring nutrition. It also possesses some action on the secondary inflammatory exudates, favoring their absorption. Carasso's method of treatment in detail is as follows: A piece of linen cloth, ten centimeters square, is folded to make a pad five centimeters by two centimeters. By means of tape this pad is secured in contact with the nostrils. The pad is to be worn day and night, and only to be removed at meal-times. It is to be moistened with five or six drops of peppermint essence four or five times a day. The nostrils are greased with vaselin for the first few days to prevent irritation. The patient is instructed to take eight or ten deep inspirations with closed mouth, retaining the air as long as possible. After ten or fifteen minutes' rest this procedure is repeated, and so on through the day.

"The following mixture is given internally:

Pure beechwood creosote	8.
Alcohol	550.
Glycerin	250.
Chloroform	20.
Essentiæ menthæ pip.	8.

"Teaspoonful every three hours in half-glassful of water. In certain cases the mixture may be diluted with sweetened water or the dose reduced. Nutrition is favored by overfeeding. Two or three liters of sterilized or boiled milk are given daily, together with plenty of meat cooked to taste and 400 or 500 grams of good wine.

"Carasso's clinical report is remarkable. In all cases tubercle-bacilli were found in the sputum, many of the cases being well advanced in the disease. In all, forty-four cases are reported, and there were six deaths and thirty-eight recoveries. Average duration of treatment was sixty days, and the recovery in all the recorded cases seems to have been permanent."

Dr. Rochester gave this method a trial, as he had had the best results in cases in which had been combined the inhalation of menthol in petroleum-oil with the internal use of increasing doses of creosote. He treated thirty-four cases in the Erie County Hospital, and arrived at the conclusion that Carasso's internal treatment is unphysiologic and very likely to cause disturbance of digestion, the thing especially to be avoided in tuberculous patients; and that the inhalation of peppermint is valuable and deserves further investigation.

DR. AMOS, of Baltimore, confirmed Dr. Rochester's observations by a report of between eighty-five and ninety cases which have been under treatment for about a year. In only two cases was there marked improvement, and in one of these this was doubtless due to the altitude and rarefied air of the mountain home to which this patient was sent. Dr. Amos particularly recommended the inhalation of peppermint, saying that patients even at the point of death found relief from it.

Dr. Denison, of Denver, said that we ought to acknowledge that we have come to the conclusion that there is no cure for tuberculosis, except what is accomplished through strengthening the resisting power or by establishing immunity. There is no remedy equal to climate. A German physician has added greatly to our knowledge by making examinations of the blood in himself, his wife and family, and some rabbits. Upon removal to the mountains, after three or four weeks there was an average improvement in the blood of 16 per cent. In Colorado the majority of persons have a florid complexion and a full peripheral circulation, due to the increased action of the heart. Dr. Denison expressed hopefulness as to the cure of tuberculosis through the means of creating immunity in the individual.

Dr. Karl von Ruck, of Asheville, N. C., expressed the belief that tuberculosis of the lymphatics precedes tuberculosis of the lungs. He did not think it possible that suppuration can be produced by stasis of the blood, and believed that the tuberculous condition is due directly to the tubercle-bacillus, as experimentation has shown. He indorsed the statement as to the great value of climatologic influences, and laid stress upon the necessity for careful management of the individual cases, so as to take advantage of every possible treatment that makes for health.

Dr. Parsons dwelt upon the catarrh of the stomach that coexists with tuberculosis, and that should be carefully treated; he contended that creosote has no beneficial influence on catarrh of the stomach, having, in fact, a tendency to produce it, and should not be given; in his experience creosote has been of little benefit. Climate is an essential factor in treatment, and, above all, a regeneration and reoxidation of blood-cells are necessary.

Dr. Rochester considered that Dr. Parsons was incorrect with regard to a "pre-tuberculous condition," because as soon as such an abnormal state existed tuberculosis itself was present, even though impossible of demonstration by tubercle-bacilli.

That in all cases of pulmonary tuberculosis there is tuberculosis of the lymphatic system associated with the disease of the lungs has been clearly proved by observations of Dr. Winthrop in 125 autopsies at the New York Foundling Hospital, who found tubercle-bacilli in the lungs, although some of these cases did, and others did not, present any symptoms of pulmonary tuberculosis. The tuberculous poison is taken in by the respiratory tract. As to a "pre-tuberculous state," the only "pre-tuberculous condition" is anything that will in any way reduce the resisting power of the individual, any weakness, any anemia whatever rendering the individual more liable to the attacks of tuberculosis.

Dr. Rochester does not believe in hereditary tuberculosis, except in so far as a poor constitution may be inherited. There is, of course, inhalation from the mother, and also the contraction of the disease from nursing at the breast of a tuberculous mother. So-called hereditary tuberculosis comes almost invariably from the maternal line; this means that the child is constantly with the mother, nursing from her, being kissed, etc. There are rare cases, of which not more than ten have been recorded, in which the fetus was tuberculous.

Dr. Rochester strongly advocated and defended the administration of increasing doses of creosote, commencing with one minim, until a dose of fifteen minims is reached. Under this treatment his cases have steadily improved by careful attention to their general condition, but without any other medicine than creosote.

As to the irritation of the stomach from creosote, this, of course, may happen if the creosote is given in water; but it can be given in claret wine or in some of the clarets of this country, the California clarets acting very nicely and being cheap; or in mucilage of acacia, with very excellent results, in spite of the slight irritation of the stomach.

The Nominating Committee presented the names of Dr. W. E. Quine, of Chicago, for Chairman, and Dr. De Lancey Rochester, of Buffalo, N. Y., for Secretary, and both were duly elected.

Dr. Paul Paquin, of St. Louis, read a paper entitled

ETIOLOGY, PATHOLOGY, AND TREATMENT OF TUBERCULOSIS; LATEST REPORT OF CASES TREATED WITH BLOOD SERUM,

and presented three patients in person. In all, tubercle-bacilli, which had been present in the sputum, had disappeared in the course of treatment with blood-serum, but had returned, after varying periods of time, upon the temporary cessation of treatment. Dr. Paquin stated that he had obtained very promising results in the treatment of tuberculosis, and that in immunized horse blood-serum exists the principle with which to fight tuberculosis in all its forms. He commented upon the fact that treatment of this fatal malady is rarely instituted when it is yet in its incipient form, and said that every one of his cases was in a more or less advanced stage of the disease. He presented a report of twenty-two cases treated with immunized blood-serum. The patients' circumstances were very unfavorable, but all of them improved in weight, from one-and-a-half pounds to twenty-two pounds in from three to eight weeks. After a lapse of four months these patients are all living, and have improved more or less during that time, half of them having been discharged from the hospital as sufficiently well to work. Dr. Paquin cited a case of knee-joint tuberculosis successfully treated after operation with anti-tuberculous serum.

The production of the serum is based on the known fact that the horse, chief among other animals, is immune to a remarkable degree to tuberculosis. The process consists of the introduction into a healthy horse of quantities of toxins, regulated by their action on the system, followed by the introduction of the germs of tuberculosis in various states of alteration and attenuation. Injections of dead bacilli are made until the temperature fails to rise; then of living bacilli in a similar manner. When there is no reaction to the germs the horse is considered immune.

The serum thus obtained is difficult of preservation. Among the twenty-two cases treated there have been four or five instances of abscess, due not to the serum, but to the syringe, which must be kept scrupulously clean.

Dr. von Ruck, of Asheville, N. C., maintained that no animal is immune to tuberculosis, and stated that he had serious doubts as to the propriety of injecting the living bacilli into a horse, and using the serum from it, without killing the horse and making the most painstaking bacteriologic examinations. Of course, the work is very difficult, and there are many obstacles in the way; but the therapeutic application of serum in the human subject is entirely premature, as the experiments are not complete.

Dr. De Lancey Rochester, of Buffalo, N. Y., referred to Flint's original observations in regard to cases of tuberculosis, in which sixteen out of forty-four recovered without any treatment whatever; that, according to his observations, tuberculosis is a disease that is of itself limited, and tends to recovery. He emphasized the fact that in advanced cases, in which there are cavities in the lung, there is, in addition to the tuberculous disease, a mixed infection, and here the specific treatment is to a great degree out of place.

Dr. Holton, of Oregon, referred to some experiments made in Geneva with the serum of the ass, which, it was claimed, was superior to that of the horse, tuberculosis being rare in those who use the milk of the ass for food. Out of twenty-five cases thirteen were reported as having recovered, two died, and nine were under treatment at the time of the report. It has been shown that milk from a tuberculous cow, when there is no affection of the udder, and when there are no bacilli in the milk, is capable of producing the disease.

Dr. Paquin stated that he did not claim that he had established the efficacy of blood-serum in the treatment of tuberculosis, but had merely made a report showing that among twenty-two cases thus treated there had been no deaths.

Dr. N. S. Davis, Jr., of Chicago, reported

A CASE OF PULMONARY HYPERTROPHIC OSTEO-ARTHROPATHY.

He defined pulmonary hypertrophic osteo-arthropathy as a chronic multiple osteitis, affecting especially the terminal phalanges, which become greatly deformed, and the bones of the extremities. These lesions follow chronic respiratory disease.

Dr. Davis concluded that pulmonary hypertrophic osteo-arthropathy is not a distinct disease, like akromegaly, but a symptom-group, oftenest coincident with chronic lung-affections, rarely with diseases of other organs, and with syphilis. It is probably due to a toxemia from the respiratory organs when the seat of certain chronic diseases.

In akromegaly as distinguished from pulmonary hypertrophic osteo-arthropathy, the terminal phalanges and finger-nails are not disproportionately enlarged and deformed; the fingers are uniformly and proportionately enlarged; the metacarpal and metatarsal regions are increased in size; kyphosis is usual, but is generally cervico-dorsal, and not dorso-lumbar, as in this affection.

Improvement in the bone-lesions has very rarely been observed. Aspiration and, if the effusion proves to be purulent, as seems probable, thorough drainage of the pleural cavity seem to be indicated.

Dr. S. Solis-Cohen, of Philadelphia, reported two cases of the affection, in one of which he found not a little difficulty in discriminating the case from akromegaly. He laid great stress upon the broadness of the hand in akromegaly as contrasted with the length of the terminal phalanges in pulmonary hypertrophic osteo-arthropathy. The condition is one of extreme interest, forming one of the great groups of affections to which clinical attention has so lately been directed—namely, the trophic results of chronic toxemias.

Dr. H. B. Sears, of Beaver Dam, Wis., read a paper entitled

MEASURES CALCULATED TO MODIFY ACUTE INFLAMMATION OF THE RESPIRATORY TRACT.

He suggested as applicable in many cases of acute respiratory inflammation the prompt exhibition of belladonna and turpentine for the purpose of abridging or modifying the local process. These have seemed to prevent excessive secretion of mucus in bronchitis, as well as to lessen the amount of exudation in lung-inflammations; and, in connection with an effort to maintain the best possible circulation of the blood, have yielded favorable results. In the early stage they seem to exercise a soothing influence upon the pulmonary mucous membrane. Digitalis occupies a very important place among the remedies for combating respiratory inflammation, except when the temperature is high or edema is present.

Dr. A. H. Burr, of Chicago, read a paper entitled

HYDROTHERAPY AND FEVER: ITS RATIONALE AND TECHNIQUE.

He said that the treatment of fevers by the cool bath is as old as the teachings of Hippocrates, and yet so new, by reason of the apathy of the profession and neglected study of its rationale, that even most medical teachers and writers of text-books seem to understand but imperfectly the scope of its physiologic action and its therapeutic possibilities. A brief summary of the most valuable investigations shows that the cardinal principles of the physiologic action of the cold bath in fevers depend: 1. On the physical properties, thermic and mechanical, of water itself acting directly as a neural stimulant. 2. On the susceptibility of the sympathetic nervous system to these stimulants and its control over the vascular and glandular organs of the body. 3. On the reflex action of the stimulated nerve-centers on (*a*) respiration, (*b*) circulation, (*c*) metabolism, (*d*) elimination, and (*e*) pyrexia. These various topics were discussed in detail. The evidence is conclusive that the earlier this treatment is instituted the more favorable are the results, and it is advisable not to wait for a diagnosis, but to bathe all fever-patients at once, as nothing but good can come of this, no matter what the diagnosis, and in the event of typhoid everything is to be gained. Halfway measures, like ablutions, spongings, and cool packs, in no way meet the indications of the cold bath. The obstacles to it, however, are absence of facilities, dangers and annoyance to the patient, exhaustive labor for attendants, and objections and prejudices of patients and friends. These trifling difficulties have been overcome by a portable folding tub for use in the bed of the patient, which Dr. Burr has devised, and which consists, first, of a large rubber sheet with rings attached by elastic tapes near its margin; second, of a crib-like wooden frame, with fastenings along the outside of the lower rail, to hold the sheet when in use. Then there are a length of ¾-inch hose with a metallic elbow for a siphon, a bath thermometer, and a good-sized sponge. The bath can be begun with the patient resting comfortably on his own mattress and pillow, with but slight disturbance.

DR. BORDER, of Pittsburg, noted the fact that an important reason for the usefulness of bathing was the increased cutaneous activity. Italian authorities have shown that entire suppression of the functions of the skin causes death in about three hours.

DR. S. SOLIS-COHEN, of Philadelphia, congratulated the author of the paper upon having made more feasible the use of cold water in private houses, especially in small towns, and stated that the reduction of temperature accomplished by means of cold water was only an incident in the treatment, being an effect not merely of the abstraction of the heat, but of the removal of the causes of the abnormal heat-production.

DR. TURCK, of Chicago, suggested that the use of cold water was advisable in other conditions than typhoid fever.

DR. DE LANCEY ROCHESTER, of Buffalo, called attention to the tonic effect of the cold bath on the nervous system of the patients, and emphasized the importance of the use of friction during the progress of the bath.

DR. JAMES TYSON, of Philadelphia, stated that from quite a large experience he agreed that every effort should be made to impress upon those to whom it is a somewhat inconvenient measure that under all circumstances cold bathing should be used for the treatment of fever. Although we are ready to admit that it is not the temperature that we particularly desire to combat, yet the fact remains that there is something that goes with the high temperature—what it is we do not know—but the high temperature is the index, and with its reduction goes the danger from this particular source. Dr. Tyson further emphasized the advisability of not waiting for a diagnosis before making use of bathing.

DR. J. M. ANDERS, of Philadelphia, stated that the scientific tendency is steadily in the direction of the treatment of the cause rather than the effect of disease, and that this is an evidence of great progress. He considered it important to note the contra-indications against bathing, and stated that it was highly advisable that once hemorrhage had occurred the Brand method should be omitted for a time, as the danger of recurrence is increased by the movements necessarily attendant upon giving the bath.

DR. SYKES, of Ohio, suggested that in country towns the ordinary oil-cloth used on tables, and which can be obtained at any store, might be employed as a substitute for other apparatus.

DR. JAMES TYSON, of Philadelphia, read a paper entitled

SYMPTOMATOLOGY OF GOUT.

He said that in no subject in medicine has there been greater looseness in the application of terms than in that of gout, and it seemed worth while to attempt to formulate briefly criteria by which to judge of the presence of gout in its more irregular forms, as to which alone confusion really exists.

Pathologists agree that the fundamental condition of gout is an excess of uric acid in the blood, and it is nearly agreed that the local symptoms of gout are due to the irritation produced by the local deposit of the acid salt. There is scarcely a single ailment that has not been ascribed to gout, and it seems necessary to establish some criteria to judge whether these troubles, arising from many causes, are thus caused or not. The following conditions may, at least, serve as a guide:

(1) It is plain that if uricacedemia can be demonstrated, it is strong presumptive evidence of gout. Unfortunately it is rarely possible to test this rare fundamental condition. (2) The supervention of an attack of regular gout simultaneously with the subsidence of some one of the ailments in question, or an alternation of these with regular gout, may be regarded as almost conclusive, let the ailment be almost what it may. (3) A history of previous attacks of regular gout, which must, of course, be taken in connection with the absence or presence of other causes capable of producing the same ailment. (4) The presence of a traceable hereditary tendency to gout has a value similar to the preceding. (5) A history of exposure to lead-poisoning and other symptoms of plumbism. (6) A history of the habit or mode of life that furnishes the conditions favorable to acquired gout. (7) The constant presence of highly colored, scanty urine of high specific gravity, with a tendency to lateritious sediments and uric-acid gravel, as it does not often happen that gout and gravel coexist. (8) The presence of glycosuria in association with gout or in alternation with it, or in certain members of gouty families, is an undoubted fact, and establishes a very close relation between these two conditions. (9) To a much less degree the presence of chronic interstitial nephritis, which is always sooner or later the fate of the victim of gout, should also receive consideration. (10) Therapeutics come into play as a factor in determining the nature of the ailment. Should relief be obtained from the typical treatment for a gouty paroxysm, its gouty nature may be regarded as established.

In answer to a question, Dr. Tyson stated that one of the difficulties most frequently to be contended with is that rheumatism is called gout, and more frequently than should be the case. The symptoms of acute gout and those of rheumatism are widely different. In chronic gout there may be a close similarity in certain symptoms, so that in some cases it is extremely difficult, if not impossible, to discriminate between rheumatism and gout.

SECTION ON SURGERY AND ANATOMY.

SECOND DAY—MAY 8TH.

DR. W. B. DEGARMO, of New York, read a paper entitled

WHAT ADVANCE HAS BEEN MADE IN THE SURGICAL CURE OF HERNIA?

He described the Czerny operation of 1876, the Macewen operation of 1886, then the McBurney operation, and finally the Halstead and Bassini operations of 1890, and detailed the results of each. He expressed himself as in favor of the Bassini and Halstead operations, and gave as his reason that by these operations the canal is cleared of all foreign substances. Then repair begins at the internal ring and the structures are restored to as nearly a normal condition as is possible.

In his own operations Dr. DeGarmo stated that he had found the following substances, which, if not removed, would have furnished strong predisposing causes for the recurrence of hernia: 1. Tough and thickened sacs, a persistent tube with a serous lining. 2. Good-sized bunches of soft, fatty tissue connected with the cord. 3. Lipomatous growths—extra-peritoneal. 4. Enlarged veins connected with the spermatic cord. 5. Masses of adherent omentum inside the sac and in the vicinity of the internal ring. He also dwelt upon the desirability of removing portions of the omentum, and upon the necessity of tying every vessel large enough to be seen, without including any fat, in order to prevent the slipping off of the ligature and the consequent occurrence of hemorrhage.

In closing, the following propositions were made:

1. Asepsis has so far diminished the dangers that we are justified in performing a truly radical operation for the relief of hernia.
2. Any method that fails to remove all abnormal tissue, or that uses suture-material quickly absorbed, invites failure.
3. The mortality has been reduced from 8 per cent. to a small fraction of 1 per cent.
4. The time of confinement to bed has been reduced from three or more weeks to eight or ten days.
5. We cannot at this time speak with absolute certainty, but we have the best reason in the world to believe that the number of permanent cures has been advanced from 40 or 50 per cent. to at least 90 per cent.

Dr. John B. Deaver, of Philadelphia, read a paper on

APPENDICITIS.

He insisted on the use of the term "appendicitis," and the avoidance of confusion from the use of the designations "typhlitis" and "perityphlitis." The diagnosis is based upon the initial pain, the gastric disturbance, the situation of the point of greatest tenderness, the torpidity of the bowel, following closely upon the ingestion of indigestible substances or even of digestible substances when the integrity of the gastro-intestinal mucous membrane has been impaired, as from sudden exposure to cold, fright, grief, etc.; together with rigidity of the lower right quadrant of the abdominal wall, nausea or vomiting, a disposition to flex the thighs upon the abdomen, restricted abdominal respiration, increased pulse-rate, elevation of temperature, intense thirst, pain referred to the back, and abdominal distention. The causes of appendicitis include the presence of foreign bodies, indiscretion in diet, exposure to cold or wet, occlusion of the lumen of the appendix from various causes. As all inflammations of the appendix are septic, drainage is essential for recovery. Early operation, it was contended, is a conservative and not a radical procedure. The proportion of cases in which but one attack occurs and is followed by recovery is exceedingly small, as compared with those in which the attack is repeated and a condition of invalidism exists in the interval. Early operation is, as a rule, a comparatively simple abdominal procedure. Operation at the end of an attack or in an interval is usually more difficult. Remonstrance was made against the median incision, first, on anatomic grounds, and, second, because the peritoneal cavity could not so well be protected against infection. The two incisions to be considered are that through, or immediately to the inner side of, the linea alba (not cutting the rectus, but pushing it inward); and that through the abdominal walls according to the method of McBurney. In any event the incision should be small.

Dr. Quimby, of New Jersey, spoke against early operation and advised medical treatment, except in extreme cases.

Dr. Murphy, of Chicago, laid particular stress upon making the diagnosis at once and operating, if possible, within twelve hours after the commencement of the disease.

Dr. Herrick, of Cleveland, stated that he was opposed to performing the operation except in extreme cases.

Dr. DeForest Willard, of Philadelphia, declared himself in favor of prompt surgical action, as did also Dr. Bishop, of Pennsylvania.

Dr. Ransohoff, of Cincinnati, spoke in regard to recurrence of attacks when the appendix was not removed, and stated that he had seen but two in which this had happened.

Dr. Deaver added that recurrence of appendicitis was quite a common incident.

Dr. J. McFadden Gaston, of Atlanta, read a paper on

THORACIC TROUBLES FROM A SURGICAL STANDPOINT.

He stated that but few surgeons have given attention to the contents of the chest, and the existing data for studying the results of traumatism or diseases of this part of the organization are so scattered through current literature as to render it difficult to arrive at satisfactory conclusions. He alluded to the employment of bleeding, by means of a trocar, for the relief of pulmonary congestion, as an extension of hepatic phlebotomy. After the withdrawal of twelve ounces of blood from the lung the canula is kept in position with a finger over the opening, to allow a clot to form, and the instrument is slowly withdrawn. Harley has modified this mode of procedure in such a way as to make the plugging of the wound by coagulation more effective and secure. He thrusts the trocar some distance into the tissues of the organ from which it is desired to extract blood, and before placing the point of the finger on the mouth of the canula, with the view of arresting the blood-flow, the instrument should be slightly withdrawn, say, one-half inch or more, in order to leave an empty passage wherein a sufficiently large blood-clot may form and fill the channel. In this case the surrounding tissues of the organ will, in contracting upon the clot, hold it so so firmly by their own resilience that on the withdrawal of the canula it will break off from the end of the much larger mass, which remains as an effective plug in the wound. Attention was directed to the discrepancy in the views of different observers touching the efficiency of aspiration simply, or the continued drainage-aspiration upon the siphon-principle in purulent pleurisy, also as to differences of opinion in regard to medicated injections into the pleural cavity after operations for the purpose of correcting septic processes, and as to the employment of irrigation for the entire removal of purulent collections from the thorax. It was also stated that less concern is felt in regard to the entrance of air into the chest upon the withdrawal of a purulent collection, and the difficulty of locating foreign bodies in the bronchial tubes, either by exploration through the trachea, or by physical signs from without through auscultation and percussion, was pointed out. Notable progress has latterly been made in the surgery of abscesses of the lung and gangrene of the parenchymatous structure of the lung; resections of a greater or less portion of the pulmonary tissue having clearly demonstrated the fact that thorough decarbonization and oxygenation of the blood may be effected by one lung. Reference was made to the apprehension generally felt in removing large accumulations of fluid after various modes of internal treatment fail to give relief, and it was stated that all danger can be avoided by energetic medicinal measures at the outset. It was pointed out that the weight of authority is in favor of treating incised or gunshot wounds of the walls of the thorax by closing them, first allowing all blood to escape that will flow out, and then closing the opening by suture, so as to shut off the pleural cavity from the external air.

Partial resection of the ribs is attended with better results in some cases of empyema than the complete removal of the segments of several ribs. Serious misgivings are now entertained by conservative surgeons in America and Europe as to the results achieved by Estlander's operation for empyema, except when there exist extremely rebellious fistulous openings of the thorax. Reference was made to the recommendations for opening the posterior mediastinum, which it is claimed opens the way for the relief of abscesses and other affections of the mediastinum. Particular attention was directed to the gradual and partial evacuation of the purulent contents of a disabled lung as being important, as an enfeebled and contracted lung cannot expand suddenly to fill up the space occupied by an extensive collection of pus.

A thoracoplastic operation—lessening the space around the collapsed lung—was performed by a Russian surgeon some five years ago, by resecting a segment two or three inches long from the seventh rib, opening the pleural cavity and washing it out, then plugging the opening with gauze. Next a vertical incision two inches long was made along the outer border of the pectoralis major muscle, exposing the sixth, fifth, and fourth ribs, without denuding them of periosteum, and removing from each a little wedge, so that the rib is made movable. A similar vertical incision was then made in the posterior axillary line, serving for the exposure and division of the same ribs in this situation. The portion of ribs lying between the two points of section are thus enabled to sink in, and when healing has taken place they protect the thoracic cavity and support the vertebral column. It was stated that the operation of thoracotomy for abscess and gangrene of the lung should be coupled with antiseptic applications and gauze tamponade.

After the reading of this paper the Nominating Committee recommended for Chairman of the Section Dr. C. A. Wheaton, of St. Paul; for Secretary, Dr. W. L. Estes, of South Bethlehem, Pa.

DR. NICHOLAS SENN, of Chicago, then read a paper on

THE TREATMENT OF MALIGNANT TUMORS BY THE TOXINS OF THE STREPTOCOCCUS OF ERYSIPELAS,

which, he stated, had not proved a success in a single case operated on or not, although he had secured the serum from three different laboratories.

DR. W. B. COLEY, of New York, stated that in the past four years he had treated 84 cases of sarcoma, 27 of carcinoma, and 4 of doubtful nature, with successful results in 11 cases of sarcoma and in 2 of carcinoma. He added that he did not attempt to cure cases of carcinoma by these means, but it was in sarcoma that the treatment did the most good.

DR. HERRICK, of Cleveland, recorded a cure in one case of sarcoma and failure in one of carcinoma.

DR. W. W. KEEN, of Philadelphia, stated that he had employed the method in some fifteen cases, and that although it had apparently done no good he would continue to use it until he was absolutely satisfied that it was of no account. In one case previously operated upon recovery ensued, but it could not with certainty be said whether the recovery was due to the treatment or not. Dr. Keen added that the injections are attended with considerable discomfort and elevation of temperature, and on that account if they did no good it would be better not to persevere in them.

DR. JOHN A. WYETH, of New York, read a paper entitled

AN ORIGINAL OSTEOPLASTIC OPERATION FOR THE REMOVAL OF LARGE VASCULAR TUMORS GROWING IN THE VAULT OF THE PHARYNX, ANTRUM OF HIGHMORE, SPHENO-MAXILLARY AND PTERYGO-MAXILLARY FISSURES.

He reported the case of a man presenting a tumor in the vault of the pharynx, which was removed with the galvano-cautery, the patient being immediately greatly relieved. A little later the left cheek began to swell and protrude, and the left eye became more prominent than usual. Some months after this the man commenced to break down rapidly, became restless, nervous, and could not sleep, and suffered great exhaustion after each application of the galvano-cautery. The pain at this time was so great that codein was necessary for its relief. The symptoms grew progressively worse, and the man's condition was very unsatisfactory for a formidable surgical procedure; he was pale and waxy, and suffered from double vision. The left eye could only be closed with great difficulty; it protruded and pressed inward, resting partly on the nose. The left cheek was much swollen. The tissues which occupied the pterygo-maxillary and zygomatic fossæ were pushed outward. On account of the vascularity of the parts involved and the danger of hemorrhage, and also on account of the man's anemic condition, a pipet was inserted into the median cephalic vein at the elbow, while a good quantity of salt-solution was in readiness to fill the bloodvessels should it have become necessary as the operation progressed. An incision was made along the temporal arch, two inches back of the outer angle of the orbit, following the arch to the edge of the orbital cavity, along the frontal process of the malar bone, curving parallel with, and one-eighth of an inch from, the orbital margin, until the point of the knife reached the infra-orbital foramen; then downward to the level of the ala nasi and outward through the cheek until the point of the knife neared the opening of Stenson's duct.

Hemorrhage was carefully checked by pressure and ligation of the larger vessels divided. The tissues were dissected away from the bone and the eye displaced to the right, and a keyhole-saw was inserted into the anterior commissure of the spheno-maxillary fissure, and the junction of the malar with the frontal bone rapidly divided. Then, turning the teeth of the saw directly downward, the floor of the orbital cavity was divided through the infra-orbital foramen and the antrum of Highmore at the level of the alveolar process of the upper maxilla. A hook was placed in the outer angle of the orbit, and a sharp jerk fractured the zygomatic process of the temporal, displacing the side of the face. The hemorrhage, which was tremendous, was easily controlled by rapidly packing sponges into the wound and making firm compression. The pulse jumped from

80 to 140, and the patient seemed about to expire. The faucet was turned on, and a pint of saline solution, at a temperature of about 120° F., allowed to run into the vein. The heart came down to 85. The tumor was again exposed, and lifted out of the antrum of Highmore and its attachments severed. The antrum was packed with iodoform-gauze. The bone was brought back into position, and a bandage and compress applied. No sutures were inserted in the bones. The patient became entirely well.

Dr. Wyeth emphasized, in conclusion, three important points: The character of the anesthetic, morphin being almost entirely relied upon; the value of transfusion with a salt-solution, to prevent collapse and shock under great loss of blood, five pints being used in this case; and the persistence of motion of the orbicular muscle of the lids after division of the branches of the seventh nerve.

Dr. Joseph M. Mathews, of Louisville, read a paper entitled

IS TOTAL EXTIRPATION OF THE RECTUM EVER JUSTIFIABLE?

He strongly argued against the advisability of total extirpation of the rectum for any cause, because the patient is neither cured of the trouble operated for nor materially benefited or relieved. To dissect and draw down the rectum in the normal state may be comparatively an easy matter, but to dissect out a rectum completely that is so pathologically changed, as by a carcinomatous growth, is merely a physical impossibility. Even admitting that it can be successfully done, no good accrues to the patient, owing to the infiltrated tissue left in and around the rectum.

Dr. Lewis H. Adler, Jr., of Philadelphia, read a paper on

EXTIRPATION AND COLOTOMY IN CASES OF CARCINOMA OF THE RECTUM.

He said that both operations offer a chance of prolonging life, and sometimes extirpation holds out the possibility of radical cure. Extirpation is out of the question in most instances, because the disease is usually incurable, and its presence is not revealed or suspected until the growth has existed for some time. In proper cases, when the growth is circumscribed and confined to the lower four or five inches of the bowel, extirpation is justifiable, if the tumor does not involve all the coats of the intestine and has not attacked nearby viscera, invaded the pelvic glands, or any of the other organs, and, finally, if its growth be not rapid or widely spreading. Hence, extirpation is of but occasional usefulness.

Colotomy is indicated in a large number of instances. It affords relief to the symptoms and retards the growth of the neoplasm. As to the choice of sites for opening the colon, Dr. Adler's preference is for the inguinal region in the majority of cases, the advantages over the lumbar operation being: 1. The smaller incision and less depth of the necessary wound, and the minimum disturbance of overlying structures. 2. The greater facility of exploring the abdomen if necessary. 3. The better position for safe anesthesia during operation. 4. Comparatively easy identification of the colon, and small difficulty in fixing the bowel to the skin without undue tension. 5. Greater readiness in forming a good spur. 6. Convenience to the patient in the way of cleanliness and the adjustment of pads. 7. Recent statistics seem to indicate that it is the less dangerous operation.

Dr. W. L. Rodman, of Louisville, read a paper on

TUMORS OF THE MAMMARY GLAND.

He complained that the nomenclature of tumors of the breast is very unsatisfactory, as the only true classification, that based on accurate pathology, has not been followed. He maintained that social condition plays no part in the etiology of tumors of the breast, single and married, sterile and fruitful women being equally liable. Disordered menstruation and hysteria also have no share in the etiology. Heredity, however, may have a slight influence. It was stated that the negro is relatively immune to carcinoma, twenty years' experience in the South having yielded but one case in a full-blooded African. In diagnosis the age of the patient is important. The average of persons with benign growths is under thirty and with sarcomas thirty-five years. Benign growths are movable, as a rule, and malignant formations soon become fixed. About 82 per cent. of all mammary neoplasms are carcinomas. The presence or absence of enlarged lymphatic glands is also a most valuable diagnostic sign. In the treatment of malignant tumors complete operation was advised. After a consideration of various operations the following summary was presented:

1. Mammary carcinoma submitted to operation before infection of the axillary glands should promise 50 per cent. of cures.

2. Although the axillary glands seem not to be involved, the axilla should be opened in every case and thoroughly cleared of glands and fat.

3. Infected axillary glands are of bad prognostic import, but a radical operation that removes them and at the same time the supraclavicular glands may cure 11 per cent. of such cases.

4. The complete operation should be practised in every case of malignant disease.

5. The mortality following the complete method is doubtless somewhat greater than is that of partial operations. The difference in results, however, is so conspicuous when the question of "cure" is considered, that the radical operation is the only one to be countenanced.

6. Statistics gathered many years ago are as valueless are those made use of in estimating the mortality after amputation of the extremities.

7. The mortality will probably be not more than 2 or 3 per cent. with the average operator. It has been shown to be less than 1 per cent. in over six-hundred cases operated upon by six American surgeons.

Dr. Keen, of Philadelphia, advised, in the treatment of carcinoma, the thorough extirpation of the entire mamma, and removal of the pectoral fascia in all instances, supplemented by cleaning out the axilla.

Dr. D. D. Stewart, of Philadelphia, read a joint paper by himself and Dr. J. L. Salinger, entitled

ELECTROLYSIS IN THE TREATMENT OF SACCULATED ANEURISM, THROUGH INTRODUCED WIRE, WITH REPORT OF A SUCCESSFUL CASE.

SECTION ON OBSTETRICS AND DISEASES OF WOMEN.

SECOND DAY—MAY 8TH.

DR. AUGUSTUS P. CLARK, of Cambridge, Mass., read a paper on the

INDICATIONS FOR TOTAL HYSTERECTOMY.

He said that if the appendages be diseased or have undergone degenerative change the uterus should be removed, because under these circumstances it has lost its function. In cases of rapidly growing interstitial fibroid tumors likewise total extirpation is indicated, because of the attendant hemorrhage and pressure upon the surrounding parts. Palliative measures, such as electricity, may be of service in arresting hemorrhage, but the radical operation must be resorted to in order to effect a cure. If a large fibroid tumor take on a degenerative process, total hysterectomy is the only expedient that will give permanent relief. When the tumor grows rapidly and overlaps the appendages, extending up into the abdominal cavity, the removal is easy. The removal of a fibroid tumor should not be deferred because it is first seen at or near the menopause. Instead of the usual cessation of growth at this time, it may continue to enlarge, and the menopause be deferred, or the tumor may take on malignant degenerative changes. Salpingo-oöphorectomy is of doubtful service in the treatment of fibroid tumors. Many fibroid growths derive their main nourishment at certain periods of their development from the uterine arteries. In these cases Martin's operation may be of service. The removal of a uterine myoma is generally indicated as soon as the tumor is discovered. In cases of grave endometritis when curettage fails total hysterectomy is invariably indicated. Sarcoma, when suspected, always requires total removal of the organ. Should hysterectomy be resorted to for ovarian tumor? Carcinoma of the ovary is almost invariably secondary to malignant disease of the uterus, so that total ablation of the internal genitalia is the only treatment for this condition. Uncontrollable prolapse of the uterus, after hysteropexy or anterior or posterior colporrhaphy has failed, is only to be treated by total hysterectomy. Also, grave hemorrhagic polypi should be so treated, as should ovarian abscess, pyosalpinx, old inflammations of the appendages, and ectopic gestation. Large cysts and papillomatous growths of the ovaries may likewise indicate the operation. When properly performed there remains but little tenderness.

DR. ALBERT H. TUTTLE, of Boston, Mass., read a paper on

TOTAL HYSTERECTOMY BY A NEW VAGINO-ABDOMINAL METHOD,

illustrated by some drawings made from nature by himself. The vaginal portion of the operation consists in sterilization of the parts and closure of the canal by a metallic stem, to which an elevator may be attached; excision of the vaginal vault, and closure of the vault from below. The abdominal portion consists, first, in a median incision; second, ligation of the ovarian artery and lateral folds of broad ligaments; third, dissection of the peritoneum anteriorly and posteriorly; fourth, ligation of the uterine arteries and ablation of the uterus; fifth, eversion of the lips of the peritoneum into the vagina and closure of the wound below; sixth, closure of the abdominal wound. The uterine stem corks up the uterus and gives support and attachment to the staff; it also defines the cervix. It has a groove which acts on a grooved director, and a number of slots to receive sutures.

Operation. A speculum is introduced into the vagina and the perineum defined. A probe determines the shape, size, and direction of the uterine canal. This is treated with carbolic acid. After incision through the vault the uterus is separated anteriorly and posteriorly. A suture is then inserted and the principal vessels are caught in the loops. The suture passes around the vaginal incision as a drawstring. A uterine stem is then selected and inserted in place after filling the cap with iodoform. If carcinoma of the cervix exist, the stem is inserted before the incision is made. A tampon of iodoform-gauze is then packed into Douglas's pouch, and the vaginal suture is drawn tight, closing the vaginal vault, except the hole through which the staff passes. The patient is then placed in position for abdominal section; a median incision is made and the ovarian arteries ligated in the usual manner. The peritoneum is incised from the appendages down to the cervix. The lateral attachments, including the uterine arteries, are clamped and the uterus removed. The anterior and posterior peritoneal flaps are brought together, and the stumps, including the uterine sutures, are placed in the angle of the vagina so as to become extra-peritoneal. If dense adhesions exist around the appendages, these need not be removed. The advantages of this over the vaginal method are that the peritoneal cavity is completely closed, primary union is rapid, and prolapse of the vagina is prevented; there is no danger of secondary hemorrhage; diseased appendages may be removed; the length of the operation is shortened by the previous vaginal dissection; the asepsis is more nearly perfect; danger of injury to the bladder and ureters is averted; and the operation is practically bloodless.

DR. I. S. STONE, of Washington, read a paper entitled

VAGINAL HYSTERECTOMY FOR PELVIC SUPPURATIVE DISEASES, AND RESULTS.

He said that this operation was first designed for carcinoma, but it may also be used for other conditions, or in cases in which partial hysterectomy by the suprapubic method has left a fistulous tract, or when there has been a partial excision of pus-tubes, leaving a diseased endometrium, or when there is a pus-collection outside of the uterus. A fecal fistula or old sinus after an operation for pus may be satisfactorily treated by vaginal hysterectomy. A septic uterus after abortion is best removed through the vagina, because there are less traumatism and less shock. The time occupied by the operation is less, and profound anesthesia may be avoided. Septic foci in the pelvis in women who have had gonorrhea are associated with a diseased endometrium and involvement of the uterine walls; hence curettement is not a cure. The uterine walls contain small abscesses, which may resemble small uterine fibroids. In many pus-cases, with severe illness, vaginal hysterectomy is of great service. Dr. Stone does not believe in leaving pus-sacs with gauze drainage.

DR. EDWARD GARCEAU, of Boston, read a paper on

VAGINAL HYSTERECTOMY.

The objections made to the operation are that it is unsurgical, brutal, blind, and unsafe; hemorrhage is likely to occur, and the bladder and ureters are exposed to injury. In regard to the first of these objections he said that in the hands of a good operator the measure is a beautiful exhibition of surgery. Wounding of the bladder and rectum probably does not occur as often as in abdominal section. Of four-hundred cases operated on by Segond none died of hemorrhage, and he never clamped the uterus once. If Péan's tractors be used, wounding of the viscera may be avoided. The patient is placed on her back; four retractors are inserted; the cervix is seized with volsellum forceps, drawn down, and excised in a circular manner; with scissors the attachments between the bladder and vagina are separated by short snips, the edge of the interior retractor is forced into the wound, and pulled upward and backward; there is no hemorrhage whatever; the same is done behind the cervix. When the uterus is densely adherent, as much as from one to one-and-one-half inches should be separated in front and behind; clamps are then placed over the ligaments, ligatures not being trustworthy. The ureters are pushed aside by displacing the peritoneum laterally. The ligament is cut the entire length of the forceps close to the uterus. The cervix and uterus are then removed by morcellation, the anterior wall being split from below upward and the cervix bilaterally.

Section on Neurology and Medical Jurisprudence

Second Day—May 8th.

Dr. W. S. Watson, of Fishkill-on-the-Hudson, N. Y., read a paper on the

TREATMENT OF ESOPHAGEAL STRICTURE BY ELECTROLYSIS.

He reported a case of forty years' standing cured by electrolysis. For thirty-five years before coming under treatment it had not been possible to swallow any solids, while liquids were swallowed with difficulty. The treatment was begun by passing a three-eighths inch electrode down to the stricture, and making gentle pressure while the current was gradually turned on. The electrode should be attached to the negative pole of the battery and the positive pole placed to the back of the neck. If gentle pressure is kept on the electrode for from three to five minutes, the current will be sure to pass. The current should be turned on and off very gradually, to avoid any shock. The patient received one treatment each week. It was possible each week to increase the size of the bougie one-eighth inch, so that at the end of six weeks an inch-bougie could be passed. The time of the contact of the electrode is an important factor in the success of the treatment. A short contact is no better than simple dilatation. The current need not exceed ten milliampères in strength.

Dr. Robert Newman, of New York City, read a paper on

ELECTRICITY IN THE TREATMENT OF EXOPHTHALMIC GOITER.

Although a few cases of exophthalmic goiter have been recorded as cured by medical means, electricity, and a combination of these two measures, most authorities agree that the disease is not curable. Dr. Newman uses galvanization only, and in such doses and in such manner as indicated by the particular case and condition under treatment. He reported three cases successfully treated by this method; all were in females. The first case was of a very aggravated type and of long standing. Various treatments had been employed without any benefit. After treatment for one year by the method named the patient declared herself well. The second case was of a milder type, and was treated continuously for nine months. In the third case all symptoms had disappeared at the end of four months. On an average five applications were made weekly.

The three prominent symptoms of this disease are: 1. Irregularity of the action of the heart and marked nervousness. 2. Enlargement of the thyroid. 3. Protrusion of the eyeballs.

The indications for treatment, therefore, are to regulate the action of the heart, control nervousness, secure sleep, reduce the size of the thyroid, and remove the new plastic exudate behind the eyeballs. To this end galvanism is applied to the vagus and sympathetic nerves, and to the thyroid gland and eyeballs. The negative pole should be placed over the organ it is desired to influence. No rule can be laid down as to doses or manner of application, as each case is a rule unto itself; but too strong and too prolonged applications are to be avoided. Complications must be treated according to the special indications present. In general, excitement, over-exertion, stimulants, strong tea and coffee, etc., are all to be avoided.

Dr. J. H. Kellogg, of Battle Creek, Mich., described a

SINUSOIDAL ELECTRIC CURRENT AND ITS PRACTICAL USES,

and exhibited an improved instrument. The distinctive features of this current are its penetrating power and painlessness. There is a constant alternation in the current, which prevents polarization of the cells. Slow revolutions cause clonic contractions of the muscles, while rapid alternations, from 3000 to 7000 per minute, cause tetanic contractions.

Among the important therapeutic uses of this form of electric current are: The induction of muscular contractions when exercise cannot be obtained by voluntary effort; contractions are induced when degeneration is in progress. In persons who have a thick layer of fat no difficulty is found in acting on the muscles beneath. The slowly alternating current is especially useful in strengthening relaxed abdominal muscles. In facial paralysis the muscles can be exercised with great nicety. In spinal curvature the tone of the muscles can be improved. Voluntary and involuntary muscles are alike stimulated to contraction by this current. It has been found useful in inactivity of the bowels by introducing one pole in the rectum and placing the other on the abdomen. In dilatation of the stomach one pole is placed over the stomach and the rapid alternating current employed. Under this influence the stomach contracts perceptibly. For the relief of pain this current has proved of much value. The opinion was expressed that the faradic current is inherently faulty.

The Nominating Committee reported the following names for the respective officers of the Section: *Chairman*—Dr. T. D. Crothers, of Hartford, Conn. *Secretary*—Dr. William J. Herdman, of Ann Arbor, Mich. *Executive Committee*—Dr. Daniel R. Brower, of Chicago, Ill.; Dr. Robert Newman, of New York, N. Y.; and Dr. W. Xavier Sudduth, of Minneapolis, Minn.

A motion was made and carried directing the Secretary to cast the unaminous ballot of the Section for the names reported by the committee.

DR. G. BETTON MASSEY made some remarks on "Electro-therapeutic Technique in the Treatment of Neurasthenia and Nervous Prostration." He confined his remarks to the best methods of applying electricity in these conditions, and described some special apparatus that he has found serviceable.

DR. HORACE M. STARKEY, of Chicago, presented a paper on

ELECTRICITY IN THE TREATMENT OF OCULAR NEURALGIA.

After the failure to relieve ocular neuralgia by providing the patient with proper glasses, electricity may prove of great value. It will be found especially useful in cases with weak extrinsic muscles and in cases of neuralgia that persist after the cause has been removed. In the latter case the galvanic or secondary faradic current should be employed. Dr. Starkey uses from two to five milliampères.

DR. HERDMAN, of Ann Arbor, Mich., explained the action of electricity in esophageal stricture upon the observation made in the laboratory, that the negative pole causes, in living tissues, an increased degree of fluidity and of alkalinity, by which the structure is softened.

DR. A. N. WILLIAMSON, of New London, Conn., then read a paper on

SUPPLEMENTARY TREATMENT OF EPILEPSY.

For the successful treatment of this affection, he contended, it is necessary to regulate many little details in the patient's life. Great care must be given to the selection of the proper food; the digestive function must be carefully maintained, and the patient should have plenty of exercise. He has never seen an attack brought on by fatigue. He uses bromids, and rarely fails to benefit the patient by their administration, but they must be employed with judgment. He never induces marked bromism. Of the bromids, the potassium salt is the most generally useful, but a mixture of six parts of potassium bromid, two of sodium bromid, and one of ammonium bromid is to be preferred. It is better to give the bromids before meals and once or twice daily, according to the amount required by the patient. *Grand mal* is more susceptible of cure than *petit mal.* The patients, whether young or old, require a master, and strict discipline should be enforced.

DR. SAMUEL J. FORT, of Ellicott City, Md., followed with

SOME NON-MEDICINAL SUGGESTIONS FOR THE TREATMENT OF EPILEPSY.

He expressed his accord with the views of the previous speaker. The habits of the patient, he said, need the constant and careful supervision of the physician. For this reason he advocates the sanatorium, hospital, or colony, where the advice and influence of the physician are constant factors in the treatment.

DR. F. W. LANGDON, of Cincinnati, O., reported a case of

FIBROMA OF PONS AND CEREBELLUM AND MULTIPLE FIBRO-PSAMMOMATA.

The patient was a single woman, aged thirty-one years, whose illness, according to her account, started with an attack resembling cholera morbus. There followed, in a short time, impaired vision, contraction of the fields of vision, total loss of hearing on the left side, and impaired hearing on the right side, paresis, etc. The patient died after some months, and at the autopsy a fibroma of the pons and cerebullum and multiple fibro-psammomata were found.

DR. ALBERT E. STERNE, of Indianapolis, Ind., made an informed report on

TOXICITY IN THE PRODUCTION OF NERVOUS DISEASE.

He has been making histologic studies of the nervous system in cases of syphilis, chorea, epilepsy, tabes, sclerosis, myelitis, poliomyelitis, syringomyelia, anemia, alcoholism, etc., and he finds in all an interstitial change in all the coats of the vessels, although the change is most marked in the case of syphilis. He hopes by a continued study to be able to arrive at some conclusion.

GENERAL SESSION.

THIRD DAY—MAY 9TH.

The Nominating Committee recommended that the next meeting be held at Atlanta, Ga., but owing to the desire to celebrate appropriately the hundredth anniversary of the discovery of vaccination in 1896, Washington may be selected as the next place of meeting.

The report of the Trustees, read by Dr. Montgomery, stated that the receipts from all sources for the past eleven months were $36,245.08; the expenditures, $30,884.82; balance on hand, $5361.08.

The receipts of the *Journal* have been: From advertising, $12,545.91; from subscriptions, $1569.75; from reprints, $1674.67; from cash sales, $203.21; from insurance on account of fire, $579; total, $16,572.54.

Expenditures, $29,344.97; cost of the *Journal* to the Association, $12,772.43; of this amount $6291.24 was expended for new machinery.

The *Journal* now possesses a plant worth about $10,000.

The report continues: "During the year no advertisements of secret remedies have been accepted that were not accompanied by a formula, but to still further comply with what appears to be the desire of a large number of those interested in the highest success of the *Journal*, the editor, with the termination of present contracts, has been instructed to accept no advertisements of medicinal preparations the proprietors of which do not give a formula containing names and quantity of each composing ingredient, to be inserted as a part of the advertisement."

The report was unanimously adopted.

A resolution to strike from the Code of Ethics the clause pertaining to the patenting of surgical instruments was indefinitely postponed.

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ORIGINAL ARTICLE.

A CONTRIBUTION TO THE STUDY OF THE ETIOLOGY OF MEMBRANOUS RHINITIS.

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From the Laboratory of Hygiene, University of Pennsylvania.

IT is only within the past few years that the disease known as membranous rhinitis, or *rhinitis fibrinosa*, has attracted the attention of bacteriologists and its true nature has been demonstrated. The course of the ailment is almost invariably benign, though tending to be chronic, and the constitutional symptoms are so slight that the patient is usually allowed to go for weeks without medical attention; relief is sought finally for the local trouble rather than for any apparent illness.

The disease is comparatively rare, and has not been accorded a place in the text-books for a great length of time. Of the cases on record but few have been studied bacteriologically. In America Park[1] and Abbott[2] only, as far as I have been able to discover, have reported such cases, and in Europe the number of observers is almost as small. One important and interesting fact has, however, been clearly demonstrated, viz., that in the great majority of cases the Klebs-Loeffler bacillus is present in the membrane in the nose, and undoubtedly also exists in the nasal discharges, as has been proved in one of the cases reported later (Case II); and it has furthermore been shown that the organism often possesses a high degree of virulence. Heretofore it has not usually been thought necessary to isolate patients suffering with membranous rhinitis, and most of the cases of which I have been able to obtain histories were treated at some dispensary and allowed to mingle freely with the other patients in the waiting-room.

I have tried particularly to obtain histories of infection from cases of membranous rhinitis resulting in faucial or laryngeal diphtheria, but without much success. The few instances in which this has been observed, however, warrant the assertion that such patients are always a possible source of contagion, and should be isolated as carefully as are those affected with the more common types of diphtheria. In short, many, probably the majority, of cases of membranous rhinitis are really forms of nasal diphtheria, and should be regarded as such.

It cannot be doubted that a condition is met clinically identical with membranous rhinitis, in which the Klebs-Loeffler bacillus cannot be demonstrated, and which seems to depend on the presence of some other organism. Thus Abel[3] has reported one case in which the *micrococcus lanceolatus* was found, and other observers, including myself, have found staphylococci in some instances, among which, in my cases, the staphylococcus aureus was largely predominant.

An interesting question naturally presents itself: Why is it that patients carrying about a virulent type of the Klebs-Loeffler bacillus do not oftener transmit diphtheria to those with whom they come in contact? The answer is not easy, and is largely theoretic. In every case observed by Park[1] and by Abbott,[2] and in all but one of my own, the organism obtained from the nose was possessed of very feeble vitality, even when highly virulent; and though kept under the most favorable conditions on Loeffler's blood-serum, the cultures died in from three to four weeks, with the one exception noted. This culture is still alive at the end of six weeks. In several of the cases observed by me the cultures were renewed every ten days, but in spite of this they ceased to grow inside of a month. It seems most probable that the apparent lack of infecting power is due to this feeble vitality. The literature on the subject is, however, very scant, and it is not unlikely that contagion has taken place much more often than is shown by the records.

The number of cases collected is, of course, too small to form the basis of any positive conclusions, except such as have already been noted. It is interesting to observe, however, that when infection does occur the resulting disease is membranous rhinitis rather than the ordinary form of diphtheria. It is not easy to explain why this should be the case, and more extended observations may prove the contrary to be true. This view is borne out by two cases reported by Seifert,[4] two by Abbott,[2] two by Chapin,[5] and four detailed in this paper. On the other hand, I have been able to find only three instances in which faucial diphtheria has followed infection from membranous rhinitis, one reported by Concetti,[6] one by Scheineman,[7] and one by myself. (See Cases XI and XII.) In the last case there is an element of doubt, so that only two positive instances can be given. It will be noted that Case XI apparently communicated the same disease to Case XII. More than a month after the latter child had been discharged as cured of the nasal trouble she returned to the dispensary suffering from faucial diphtheria; and of the two other children in the same house, who were taken ill later, both had the disease confined to the fauces. As it had been impossible to examine Case XII thoroughly when first sick, it seems not unlikely that the disease persisted in some part of the naso-pharynx, and that finally the fauces became infected. The length of time which elapsed, however, before the second illness, afforded abundant opportunity for a fresh exposure, though no such history could be obtained.

In his last memoir on the subject, Bretonneau pointed out the disease known to the French at that time as "coryza couenneux" as an especially dangerous condition from which many grave diphtheric affections took rise. In all of the cases related by him in support of this opinion the angina followed the nasal symptoms, and they appear to have been instances of a more or less common type of diphtheria, in which the earliest symptoms are referable to the nose. Schlichter[8] has reported a series of cases of this character occurring in infants. It is a matter of not uncommon observation that a discharge from the nostrils persists for some time after the throat-symptoms have subsided in ordinary cases of diphtheria, and it seems not improbable that the Klebs-Loeffler bacillus may remain alive in the more inaccessible parts of the nose for some time, and give rise to trouble.

The question as to whether or not the organism found in these cases of membranous rhinitis, which resembles the Klebs-Loeffler bacillus so closely in every way except in pathogenic power, is a pseudo-diphtheric bacillus or the genuine Klebs-Loeffler, has been already ably discussed by Abbott,[2] who some time before had made a study of the relation existing between the pseudo-diphtheria-bacilli and the diphtheria-bacilli. Park[1] and Koplik[9] have also made a study of the same subject, and the conclusions of the former agree substantially with those of Abbott, while Koplik has reached no definite conclusions.

Briefly stated, Abbott's conclusions are that the Klebs-Loeffler bacillus is found of varying degrees of virulence, and even devoid of virulence entirely, and that all bacilli that possess the morphologic and cultural peculiarities of the diphtheria-bacillus should be considered as such, irrespective of their pathogenic power. The name "pseudo-diphtheric" should be applied only to "that organism or group of organisms (for there are probably several) that are enough like the diphtheria-bacillus to attract attention, but are distinguishable from it by certain morphologic and cultural peculiarities aside from the question of virulence."

During the course of this work the pseudo-diphtheria-bacillus has been constantly borne in mind, and I am convinced that in every case the organism found was the true Klebs-Loeffler bacillus, which had in some way become modified as to virulence and vitality.

As mentioned, the literature of the disease is not extensive, and the number of cases on record is small, while in a large proportion of these no bacteriologic examination was made. The disease has been regarded as a benign, non-contagious malady until recently, and is so considered in many text-books. Concetti[6] was the first, I believe, to call attention to the danger of contagion, and in a paper published in 1892 he urges the importance of disinfection, isolation, and individual prophylaxis.

I have reviewed the literature of the disease as carefully as possible, and give here an abstract of the result.

The earliest report of cases that I have been able to find is by Isambert,[10] who reports two instances under the name "Coryza Couenneux." He calls attention to the extreme rarity of this condition existing by itself and unaccompanied by any other manifestation of diphtheria, and does not question its relation to that disease. He says that he has seen but two cases of the kind, details of which are given at some length, as they differ from all others of which I have been able to obtain histories in their sudden onset and the severity of the constitutional symptoms.

In both cases the source of the contagion was evident, one being in an interne, the other in an externe of l'Hôpital des Enfants, where they see many children with diphtheria daily. In the first patient the attack was ushered in with high fever, intense headache and some soreness of the throat. On the next morning there was an acrid, corrosive, sero-purulent discharge from the nostrils, abundant enough to require many napkins per day. The throat-symptoms grew no worse, and were considered entirely "accessory." On the sixth day M. Roger found some deposit on the tonsils, but regarded this as a "secondary phenomenon," after the enormous false membranes that had come from the nose. These were thick, large, stratified, and represented moulds of the turbinated bones. The membrane disappeared from the tonsils in a few days, and the general symptoms ameliorated rapidly, while the formation of membrane in the nose persisted for ten months, though every known form of treatment was employed, and the patient travelled extensively, hoping that the change of climate would be of benefit.

The second case began in much the same way, but was preceded by several days of "malaise." There was at no time any formation of membrane except in the nose. This was thick and large, with an abundant sero-purulent discharge from the nostrils. The acute symptoms soon disappeared, but convalescence was slow.

It seems doubtful if the first of these two cases can properly be considered as an instance of membranous rhinitis, for some membrane formed on the tonsils later, though the disease was mainly confined to the nose, and persisted there for a very long time. I have quoted it, since Isambert has described it as one of the only two cases ever seen by him of "coryza coeunneux" unaccompanied by other symptoms of diphtheria.

It is of interest to note here that Schlichter,[8] as already quoted, considers the nose as a frequent channel of invasion for diphtheria in sucklings, but he reports no instances in which the disease began in this manner in grown persons.

Schüler[11] reports one case in a boy, five weeks old, before the discovery of the Klebs-Loeffler bacillus. The child died of an intercurrent erysipelas.

Henoch[12] details one case in his *Lehrbuch*.

Major[13] reports one case in a lady of eighteen years. The membrane was examined under the microscope, but "no micrococci found." Cultures were not made. Treatment lasted for three months.

Seifert[4] reports three cases, one in an adult, the other two being in children who were sisters. One was affected after the other—apparently an instance of direct infection. Both had follicular tonsillitis. The author considered the disease to be of a diphtheric nature. In a later communication he mentioned a fourth case, following pneumonia.

Moldenhauer[14] reports four cases, one of which is doubtful, as there was a slight deposit on the tonsils, but unaccompanied by any febrile symptoms. At the time that these patients were seen diphtheria was more prevalent than usual in Leipsic. The author did not feel sure about the relation of the trouble to diphtheria, but was inclined to consider it as a distinct disease. The membrane was examined microscopically by Huber, and showed nothing by which it could be distinguished from that of diphtheria.

Hammond[15] reports one instance of the disease in his own person. He had "a violent rhinitis, different in character and of far greater intensity than any that any rhinologist I have consulted has ever witnessed, and of a form not laid down in the books. There was great swelling of the nose and face, the discharge during the first stage of an exceedingly acrid and thin fluid, and the formation subsequently of a membraniform substance not very unlike that present in diphtheria, but very loosely attached to the membrane, and showing no disposition to extend beyond the nasal cavities."

Hortmann[34] has reported six cases in children of from three to nine years of age. He considered the disease as distinct from diphtheria.

Ryerson[16] has reported one case in an adult. No bacteriologic examination is mentioned, and the author did not seem to suspect any diphtheric character.

Bischofswerder[17] reports three cases observed at Baginsky's clinic. He was unable to establish any connection with diphtheria or other infectious disease, and considered the condition as the result of an increase in the symptoms of ordinary coryza depending largely on the severity of the weather.

Potter[18] believes that the formation of membrane occurs in about 2 per cent. of all cases of acute rhinitis. He discusses the relation of the disease to diphtheria, and considers the questions involved as unsettled. He has seen but one case in which he could form any opinion as to the cause of the membrane. This patient had suffered from scarlet fever when a child, and the upper air-passages still showed the effect, and were very sensitive to changes of temperature.*

Gluck[19] reports having observed a series of cases, but gives neither the details nor the results. He speaks of the affection as being entirely independent of diphtheria, and does not mention any bacteriologic examination in any of his cases.

Raulin[20] reports four cases observed by him. The membranes were examined under the microscope, and found to resemble those of diphtheria. They contained many cocci, but no cultures were made. The author did not consider the disease contagious.

Chapin[21] reviews the literature of the disease and gives the details of two cases seen by him with Dr. Wright. The patients were sisters, aged two and three years, one affected after the other. The symptoms had appeared two weeks before relief was sought. Both children made a good recovery, and at no time did either show any constitutional disturbance worthy of note. In discussing the relation of the disease to diphtheria, and the diagnosis between the two the author says: "As far as the false membrane itself is concerned, both in structure and attachment, it does not appear to differ from diphtheria. This being the case, our diagnosis must rest upon its exclusive situation in the nose, together with the absence of sepsis and general constitutional symptoms. It appears to me, in the present state of our knowledge, that this negative, tentative diagnosis is all we are justified in making." He quotes Voltolini as saying that he had never seen diphtheria confined to the nose.

Newcomb[22] reports two cases following measles. No cultures are mentioned, but examination of the membranes showed "a fibrous structure entangling a few epithelial and pus-cells, with here and there scanty rod-shaped and spherical bacteria." The author suggests that all such cases should be studied bacteriologically in order to discover their etiology.

Hunt[23] reports one case, in the wife of a physician. She had been examined by her husband and Dr. Campbell, of Liverpool, who said that "whatever else it might be it was not diphtheria." The disease ran a rather chronic course, without constitutional disturbance. There had been no diphtheria in the neighborhood, nor did a child living in the same house become infected. The membrane was examined microscopically, but not for bacteria.

In commenting on this case Mr. Lennox Browne said that so far as he was aware it was the only one of the kind ever reported in England.

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* Potter is quoted by Abel[3] and Raulin[20] as saying that membrane occurs in 20 per cent. of all cases of acute rhinitis, and the latter discredits the accuracy of the statement, contrasting it with the observations of other authors, all of whom agree that the disease is a rare one. I have studied the original paper of Potter, and take this opportunity of calling attention to the error into which Abel and Raulin have fallen. The figures should be 2 per cent. instead of 20 per cent.

Leemans[24] has reported two cases. In both there was a short febrile state, but almost entire absence of constitutional disturbance. The membranes were so thick and firm that when removed they represented moulds of the turbinated bones and meatus. The author's paper is commented on by a commission of the society before which it was read, as follows: "Dr. L. insists at length, too much so in our opinion, on the diagnostic difference between the disease seen in these two cases and diphtheritic rhinitis. It seems impossible that such a confusion could present itself."

Scheineman[7] reports one case. The membrane was limited to one side of the nostril, which was completely occluded. The patient had a playmate who developed diphtheria. The author says that the disease has usually been considered non-contagious, but this case has led him to modify his views on the subject. The membrane was examined, but the presence of the Klebs-Loeffler bacillus was not proved. The bacteriologic examination also proved negative. In a subsequent communication the author reports a second case in which the Klebs-Loeffler bacillus and streptococci were found. He says that from a prophylactic point of view these cases should be regarded as a benign diphtheria.

Lieven[25] reports one case, from which he obtained an organism that when introduced into the noses of other children by means of tampons caused a similar condition in them.

Baginsky[26] says that he has found the Klebs-Loeffler bacillus in cases of "pseudo-membranous rhinitis," and speaks of them also as "chronic diphtheria." No details are given, nor is the number of cases mentioned. He considers the finding of the Klebs-Loeffler bacillus to be of interest in view of the contagious nature of the disease. Later he mentions one case in which the Klebs-Loeffler bacillus was found and its identity proved by experiments on animals.

Park[1] has examined ten cases of typical membranous rhinitis, all of the usual benign character. In all he found the Klebs-Loeffler bacillus, of varying degrees of virulence. In nine the membrane was confined exclusively to the nose, while in one there was some exudate on the tonsils. Only six of these cases have been published in detail; the other four were reported to Welch[29] in a private communication. The virulence of the organism obtained was tested in five of the six cases published. From one case it killed a guinea-pig in four days; from two in five days, while in the remaining two the animals were made sick, but recovered.

Abel[3] has reported one case in which he found the diplococcus of pneumonia.

Stamm[27] reports three cases observed by himself, all of which ran a benign course, though virulent cultures of the Klebs-Loeffler bacillus were obtained in each instance.

Concetti[6] says that he has seen a total of five cases. In two of these the diphtheric nature was demonstrated by a bacteriologic examination; in two contagion followed, in one of which there was a subsequent paralysis; while in the fifth the larynx became involved later. The author points out the danger from such cases, and shows that however mild the symptoms may be, at any moment a grave form of the disease may supervene, or else be conveyed to others with whom the patient comes in contact. He says that they should be examined bacteriologically, and advises measures of disinfection, isolation, and individual prophylaxis.

Von Storck[28] reports three cases, in none of which was the Klebs-Loeffler bacillus found. Two of the patients had been similarly affected before. The author says that even if the bacteriologic examination had not proved negative, neither of these cases would have been considered as diphtheria.

Abbott[2] reports three cases, in all of which the Klebs-Loeffler bacillus was found, in two of them of a virulent type. Two of the patients were sisters, and one was affected after the other, being an instance of direct infection. The organism obtained from the older sister, who was first seen, was fatal to guinea-pigs in less than forty hours, and the animals presented the characteristic lesions; while that from the second child did not cause death, producing only a slight local reaction, with temporary indisposition. The author says: "Except for the absence of pathogenic properties, the bacilli obtained from the latter case seen by me could not, by any of the means usually employed, be differentiated from the genuine virulent *bacillus diphtheriæ.*" Attention is called to the importance of isolating such cases. The clinical history of the first case is not complete, as the patient disappeared from the clinic; but in neither of the other two were there any constitutional symptoms of note.

The formation of membrane after operations on the nose, or the application of the galvano-cautery, appears to be not very uncommon. Baumgarten[30] has reported two cases following operation, one for an adenoid growth, the other for polypus; and Maggiora and Gradinego[31] have reported one, which is especially noteworthy as having been probably the first in which a bacteriologic examination was made. The organism found was the staphylococcus aureus.

Bresgen[32] asserts that he has frequently seen the formation of membrane follow the use of the galvano-cautery, and this may recur for some time afterward on each fresh exposure of the patient to cold. Schmithersen[33] reports twelve cases of this nature. I have not thought it proper, however, to consider cases following traumatism as instances of true membranous rhinitis.

(To be concluded.)

Loomis Memorial.—As a memorial of the late Dr. Alfred L. Loomis, a site of 190 acres has been purchased in Liberty, Sullivan County, New York, on a plateau 2200 feet above the sea, and on this will be erected a building to be called the Alfred L. Loomis Memorial. Around the building will be grouped a number of cottages, and the whole will be used as a sanitarium for tuberculous patients.

ORIGINAL ADDRESS.

THE ELEMENTS OF PROFESSIONAL SUCCESS.[1]

BY WILLIAM P. MUNN, M.D.,
PROFESSOR OF GENITO-URINARY DISEASES AND CLINICAL SURGERY IN THE UNIVERSITY OF DENVER; MEMBER OF THE COLORADO STATE BOARD OF HEALTH AND HEALTH COMMISSIONER OF THE CITY OF DENVER.

AN occasion like this offers a proper opportunity for speaking of the future and of those influences that make up or mar the individual career. The elements of success are the study of all who strive earnestly in life. They may be studied in ignorance or with only a faint impression of their real import; nevertheless they are studied, and the results are applied in the daily battle of life.

The elements of success in a medical career differ in individual cases as vary individual definitions of success. There are those to whom success means only the accumulation of wealth, and who are indifferent to the methods employed. To such men the practice of medicine bears the aspect of a trade or business. Their ambition is not to do good, but to be paid for either doing it, or appearing to do it; they do not strive to shine in order to give light, but rather for the pecuniary profit that will come to them in return. I speak of these people first, not because they deserve the first mention, but because the glittering figure they cut in the world is so ofen delusive to the beginner. Hence a warning against evil men and methods is not out of place at such a time as this.

John Ruskin, prince of modern moralists, has aptly said that if your work is first with you and your fee second, you are servants of the Lord of Work, who is God; but if your fee is first in your mind and your work is second,you are servants of the Lord of Fee, who is the devil. A servant of the Lord of Fee is an influence for evil in any community. The young physician who falls under the malign and immoral influence of such an one can never attain to true success. The accumulation of pelf may for a time give satisfaction of a certain kind to such poor-principled souls, but they can never have the true satisfaction of doing good for its own sake, of holding honor in esteem simply because it is honor, regardless of whether it is profitable or is not profitable. A homely illustration of such success and the methods that lead to it is seen in the fattening of animals. They push and jostle and tramp through filth and toward filth in their endeavors to reach the trough, which once reached they never leave until it is quite empty. And to what end? Simply to fatten themselves—ignorantly, it is true, but none the less certainly, that they may in time be divided amongst others. And the beast has no conception of the indifferent contempt in which mankind holds him. So souls having low ideals trample through filth, struggle for it, and perhaps attain it, having no conception within themselves of the contempt in which they are held by souls with purer and higher ideals.

You are entering to-night, ladies and gentlemen, upon a life that will be for each and all of you, we trust, a profession, not a trade. The practice of medicine is an arduous, difficult occupation. The path to real success in it is strewn with many obstacles, leads through much that is unpleasant and dangerous, and is very long indeed to those who attain the desired goal. To the self-seeker, to the mere greedy striver for pelf, to the lazy and indifferent student, to the man or woman of low ideals, this path to true success offers no temptation. Their feet will never tread its rugged surface. But it will be trodden by thousands of those who are earnest disciples of the science, who are eager students of the art, who have high ideals, and who are ready to sacrifice mere material interests to the welfare of humanity or the advancement of true scientific attainments. Those who travel this road are the servants of toil, and of the Lord of honest toil, who is God. True, they do consider their fee, for in order to live one must be remunerated, and it is an old saying that the laborer is worthy of his hire, but with them the fee comes second, the work is first.

You must not understand me to be one of those who undervalue the services the medical man gives to his patients and to the community. Far from it. We render service of value, and ought to receive a proper monetary acknowledgment in return. And we all know that, as a rule, people do not adequately appreciate any service for which they do not pay. But the idea I want to insist upon is this: that you should not allow money-making to become the *keynote* of your lives. If you do, then all the finer, purer, truer strains that should resound through your lives will be drowned out by the metallic clash and the bass-drum of the noisy money-getter. The sweet voice of truth will be silenced by the harsh braying of the charlatan, and yourselves will become mere tradesmen, instead of professional gentlemen. How much of true success is dependent upon the high ideal that one sets before himself! How much of false success is dependent upon low ideals, upon false conceptions of duty, upon mean and paltry estimates of the world's work, and of the individual's relationship to it!

Next in importance to high moral standards comes professional efficiency. In modern medicine, as in all other pursuits, we recognize two kinds of persons who are successful from a professional standpoint. One class possesses talent, the other possesses tact. Happy is that man whom nature has endowed with a reasonable modicum of both. Some one asks, "What is talent?" With all due deference to the lexicographers, I would reply that true talent is the ability to do hard work, to do it thoroughly, and to keep at it continuously. There are other will-o'-the-wisp characteristics that some mistakenly call talent. But the talent that lasts is the capacity for work. Work as an element of professional success is directed toward scientific study and the application of knowledge so gained to the actual problems of health and disease. Some may imagine that the possession of the diploma will put an end to that kind of study, but you, I think, know better than that. There is not a man or a woman among your number to-night who will not work harder, study harder, strive harder, during the coming three years than you have done during the past three years. But there will be some change in the work. It will have the fascination of demonstrable, practical value. You will have an opportunity of gauging the value of the scientific attainments that are yours. It will be a satisfaction, a pleasure, a source of deep gratification, for you to demonstrate as the months go by, and afford you ever-increasing opportunities, that to-day, more than ever before in the history of medical progress, science and practice travel in parallel paths. There was a time when the great majority scouted the idea of science as applied to medicine, when the so-called "ultra-scientific" practitioner was ignored or disdained by his more ignorant and so-called "more practical" professional brother. That day has passed away forever. The hard, incontrovertible logic of events has placed our science upon the same plane with our art, talent upon the same footing as tact, while brains have been given more than an equal show in their combat with braggadocio and buncombe.

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[1] An address to the graduating class of the Medical Department of the University of Denver.

You are to be congratulated upon the attainment of such a condition, but the people as a whole are to be still more highly congratulated. The positive scientific basis upon which our profession labors to-day means much to us—it means infinitely more to suffering humanity. When Edward Jenner discovered the preventive influence of vaccination upon smallpox it was an empiric advance, based upon a principle of which he knew nothing. Magnificent as were the results that came from his discovery, they are as nothing compared with the attainments made possible to modern surgery by the universal recognition of the principles deliberately applied by Lister as a result of accurate scientific research. Robert Koch's discovery of the bacillus of tuberculosis was a scientific contribution to the world's welfare far outreaching in its value even Jenner's magnificent empiric gift, for Koch's discovery gave us scientific principles for further research, for new discoveries, for even more far-reaching revelations. To the present generation of doctors smallpox is almost a curiosity, its occurrence is so rare. Two generations hence pulmonary tuberculosis, diphtheria, typhoid fever, and scarlet fever will be as rarely seen by the average doctor as is smallpox to-day. Measles and whooping-cough will almost never make their appearance upon the mortality-list, and cholera infantum will no longer ravage the infant population of our cities during the summer months. This is no idle prophecy; it is the deliberate prediction of the whole scientific world, based upon the remarkable discoveries of the last ten years, discoveries that have already begun to bear demonstrable fruit in the lowered mortality-rates of every civilized city in the world. In our own community within the last four years the application of modern hygienic science has been instrumental in effecting a reduction of more than 800 per year in the mortality lists; 3200 persons are to-day alive in this city who would have been dead ere this had it not been for the inauguration of sanitary reforms in our municipality. Those who sit upon this stage to-night know, as you perhaps do not, how this remarkable saving of human life was effected through the rigid application of scientific principles by one who was then the revered senior member of the faculty of this college. He sacrificed his own life in the struggle, and was borne hence followed by the loving remembrance of his associates, mourned by this whole city as their well-beloved dead. No monument of marble or of brass has been reared to the memory of Henry K. Steele, but our hearts still hold him dear, and more than three-thousand homes in Denver, whose family circles are unbroken, owe to his memory their unspoken debt of loving gratitude.

Preventive medicine is the science of the past two decades. It is the science of to-day! It is the science of the future! Never until within the past few years has such a proposition as the extinction of communicable disease been broached. To-day it is recognized as a legitimate subject of discussion. Its possibility is assured, and we only discuss the ways and means to be adopted in order to secure its speedy consummation.

It is proper to ask at such a time the avenues along which such great advances have so recently been made, and along which they must still continue. Let those throngs of restless students who for twenty years have sought the most advanced instruction of the German laboratories give us the answer. The greatest advances have emanated from those laboratories; they have been given to the world by the race that above all other races seems to have the genius and the talent most essential to real success in science, the genius of hard unremitting work, the talent of application. In Germany the science and the art of medicine have gone hand-in-hand, though sometimes science has led with giant footsteps, dragging unwilling art behind through the mire of uncertainty. But to-day they are reaching firm ground.

We need in America, and in Colorado more than in any other portion of America, the men, the methods, and the resources of the German laboratories. In this State should first be solved the problem of the absolute cure of pulmonary tuberculosis. But we need means, we need institutions in which to conduct our researches, we need great laboratories, we need money to pay the men who will carry on the mighty work. We want endowments for well-equipped schools and laboratories that shall equal any in existence either at home or abroad. I can conceive of no more fitting time or place for voicing this need. May the appeal fall upon some willing ears. Baltimore has had her Johns Hopkins and her Elizabeth Garrett; New York has her Carnegie; Brooklyn has her Hoagland. What man or woman in Denver will have the proud honor of naming an institution devoted to modern medical science, to the solution of those hitherto insoluble problems of contagious diseases, and their extinction by the application of the principles that underlie all modern medical progress?

Professional success, as a rule, comes slowly. Merit seldom wins rapid recognition. It will be difficult for you at times to be patient in your waiting for success; the delay will be irksome. And, to cap the climax of your discontent, you may see others whom your own reason tells you are less competent than yourselves, making apparently rapid success and exulting in it with boastful self-assurance. Do not let such incidents discourage you. In very truth unworthy men often go up like rockets; but if you only wait in patience, you will soon see them come down like sticks. Solid growth is slow. Time plays an important part in rounding out attainments and giving certainty to judgment. When you have proved yourself worthy the world will be forced to make acknowledgment of the fact. Many a man has profited by the history of others, and to you it may not be out of place to cite briefly the career of a man who, when he died a few years ago, was admittedly the leader of the medical profession in America and the peer of any surgeon the world had ever known.

When D. Hayes Agnew was thirty years old he had scored a failure in medical practice, had devoted eight years to the iron business, and failed in that, and was returning to medicine without means, without friends, and with the blight of a decade of seeming failure upon his life. But the flame of genius could not be thus quenched. It burned on, hidden, it is true, but ever increasing in brilliancy. Agnew was fifty years old ere he began to attain to eminence, but from that time until the end of his long and useful life, his fame grew until it filled the world. To him success came slowly but surely, and it was the legitimate fruition of a character built upon principles of the strictest integrity, of a soul animated by love of his profession, of a life characterized by indomitable perseverance and application to work, of a mind capable of constant growth and of maintaining an ever-increasing grasp. When you have moments of discouragement—and who has not?—think of D. Hayes Agnew. You will find his life an inspiration.

I turn to the members of this graduating class with a last question. To what use do you intend to put your professional attainments? Will you be the loyal servants of the community, or will you endeavor to make the community merely your financial support? We all have an interest in your reply. And that reply you will give not to night, but every day of every year that you practise medicine. No words of yours or mine will give that reply, but your everyday professional life will speak the truth, and lie not; your hands will engrave the answer in letters unmistakable upon the public character that you will bear, and the whole world will read it, and will know you better than you can ever know yourselves.

I beg of you, then, to take your stand from the very first day upon the right side. Make no mistake. Let ethical principles govern your life. And the longer you are in medicine, the more certainly you will know that medical ethics—that is, right ethical living—is indeed a living issue with you each and every day; not perhaps a subject for discussion or debate; but an unwritten law for the decision of those fine questions of human rights and privileges that are so profoundly influenced by the physician's advice, so intimately interwoven with the physician's everyday life. Whatever position your conscience bids you take in these matters, take it and stand unwaveringly upon it, remembering in addition but two things which it is our duty to impress upon your minds with indelible clearness, which we would sear upon your memories in fiery letters that you can never forget.

First: The confidences of your patients you must hold inviolate, revealing nothing, discussing nothing. The consulting-room is a confessional more sacred than that of any priest; the sick-bed is an altar from which no tale of gossip, slander, or violated confidence should ever reach the outer world. Of this confessional and of this altar you become to night ministering attendants.

Second: Human life is the sacred gift of the Almighty. You have no right to destroy it. It is your privilege to strive to save; it is your occupation to relieve suffering; it may sometimes be your solemn duty to decide which of two lives you will save. But it never is, and it never can become, your duty or your privilege to destroy human life. And remember, I beg of you, that the existence of life is not dependent merely upon the drawn breath, or the beating heart; individual existence dates from the moment of conception. Beware, then, that you never yield to the solicitations of friendship, to the arguments of convenience, to the temptations of gold, or to the plea of threatened disgrace. Never permit your hand to aid nor your advice to sanction, however indirectly, the destruction of a human entity. It exists by the will of a power greater than that of man. Beware lest you rashly assume His prerogatives. Remember that human life is sacred.

And now, ladies and gentlemen of the Class of '95, on behalf of this faculty I extend to you our most profound congratulations upon the termination of your apprenticeship in medicine and surgery; we give you our kindliest wishes for future success, and we extend to you one and all the right hand of fraternal greeting as fellow-members of a craft than which none is more noble, none is more self-sacrificing, none more worthy of an ideal devotion.

CLINICAL MEMORANDUM.

THE RESULTS OF THREE INTERESTING AUTOPSIES OF CARCINOMA OF THE STOMACH.[1]

BY J. W. FELTY, M.D.,
OF ABILENE, KANSAS.

CASE I.—Charles M., aged thirty-eight, a carpenter and a heavy drinker, called upon me in April, 1889, to relieve him of intense nausea, great pain after eating, and more or less persistent vomiting, with a long train of dyspeptic symptoms. Knowing that he had drunk alcohol freely, as whisky or brandy, and that the quantity he drank at one time could be gauged only by the capacity of his stomach, I supposed the case to be one of drunkard's stomach. The man told me that he had frequently poured the alcohol from a shellac-solution, which he had occasion to use in staining hard word, and drank it. I had good evidence that his stomach had at least a fair chance of being diseased, judging from the amount of abuse to which it had been subjected. He was treated by all known remedies for dyspepsia and gastric catarrh, including lavage, but without avail. In July and August, only a few months after he was first seen, he failed to retain any food in his stomach for more than an hour, and would often vomit it immediately. During the early part of September he began to vomit blood, not of a "coffee-ground" character, but pure blood, mixed with a small amount of mucus. As the phenomenon persisted with the treatment by lavage with hot boric-acid solution, so beneficial in chronic gastric catarrh, I made the diagnosis of gastric ulcer with chronic gastric catarrh. The vomiting was persistent, and always present soon after a meal, and so I decided to feed him by the rectum exclusively. Emaciation became very marked, and anemia most pronounced. After fasting about ten days, the stomach-symptoms remaining the same as before, I returned to stomach-feeding with raw eggs and milk. The cachexia was now apparent. Free hydrochloric acid was absent in all but four out of forty examinations. No tumor could be made out, but a singularly persistent concentrated pain over the pylorus was present. It was about this time that the "never-failing symptom" of the absence of free hydrochloric acid in carcinoma of the stomach was heralded from Kussmaul and Ewald's clinic in Germany, and I was loath to believe that I had a case of carcinoma of the stomach, because free hydrochloric acid was detected upon some of the examinations of vomited meals. Constipation was a prominent symptom throughout the case, and there was a scarcity of urine with no albumin. The temperature was subnormal. The cachexia became more and more prominent. Edema of the ankles and legs was present, and finally general anasarca. The anemia became more and more pronounced, and the pain increased with the loss of strength—in fact, all of the symptoms pointed strongly to carcinoma of the stomach at the pylorus, or to an ulcer of the stomach with an aggravated form of chronic gastric catarrh. Finding free hydrochloric acid, and having a hemorrhage of a character such as we find in ulcer of the stomach, and rather copious in quantity (about four ounces), I decided that the disease was ulcer of the stomach. The man's emaciation was rapid, and he died on the 29th of October, 1889.

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[1] Read before the Golden Belt Medical Society.

When the absence of free hydrochloric acid as a symptom of carcinoma of the stomach was first given to the profession, it was believed to be an almost unfailing symptom. This, however, has been discovered to be an error. Kinnicutt says: "The presence ot free hydrochloric acid in the stomach-contents in repeated examinations in doubtful cases is of the greatest importance as a diagnostic symptom, and points very certainly to an absence of carcinoma." This was not the case here, and Rosenheim in recent years has handed down the solution to the question as will be observed from the result of the autopsy. He has shown that "in cases in which carcinoma develops in the base of an old ulcer hydrochloric acid may be present throughout the course."

The autopsy revealed an ulcer as large as a silver dollar on the greater curvature in close proximity to the pylorus, in fact, extending into it with a scirrhus at the pylorus, forming a stricture, the caliber being that of a large goose-quill. The stomach was somewhat dilated and congested. The scirrhus was confined to the pylorus, and did not involve any of the contiguous organs or tissues.

CASE II.—John H., aged sixty-seven, a retired miner, consulted me first in May, 1891, for "biliousness and constipation," as he diagnosticated his case. He had many of the ordinary symptoms of dyspepsia, but vomited very seldom, indeed. He manifested an unusual amount of interest in his "large stomach," as he termed it, and said that all his food fermented and bloated his stomach and bowels. He had sought in vain for relief. Upon examination I found a large tympanitic abdomen, prominent four or five inches on each side of the median line, and extending to the bladder. There was no tumor, and no cachexia. He vomited a dry parchment-like membrane, dark in color and tough, a fact that I have never been able to explain satisfactorily to myself. The biliousness and constipation, as the man termed it, developed very rapidly for the worse. No diagnosis was made beyond that of a complicated case of dyspepsia. Death occurred October 10, 1891.

The autopsy revealed a very interesting condition. I found a very large dilated stomach, extending from the diaphragm to the bladder. The stomach-capacity was eight quarts. The pyloric end was misplaced, and was found over the bladder, dragging the intestines down with it. The stomach when opened contained about a half-gallon of fluid, although the patient had not taken any liquid for twenty-four hours before death. In the fluid were found pieces of the parchment-like membrane. The pylorus was almost entirely occluded by a stricture due to a scirrhus extending from the pylorus and lesser curvature to a point three or four inches from the duodenum. The mucous membrane of the stomach was diseased, the walls were thin, showing the effects of a chronic gastric catarrh and degenerative changes in the coatings of the stomach. The other organs of the body were in a normal condition, except the heart, which showed signs of fatty degeneration. I should add further that this patient was a dyspeptic for many years, and it is impossible to tell when the fatal malady first began to develop. In fact, Ewald in his treatise makes this remarkable statement: "Dyspeptic symptoms are rare prior to the onset of gastric carcinoma."

CASE III.—Mrs. F., aged forty-nine, was seized with a violent chill on July 12, 1894. She was in failing health for five or six months, but was able to attend to her ordinary household duties until a week or ten days prior to my first visit. I saw her during her second chill (having had one three days before). The chill lasted for an hour, and completely exhausted her; her temperature rose to 106.2° and she became slightly delirious. Not having examined her thoroughly, and not knowing anything about the case, I concluded that the disease was malarial fever, and treated her accordingly. On the following day, but a few hours later in the day, she had another chill, which I aborted with a hypodermic injection of morphin, atropin, pilocarpin and strychnin. After a thorough examination I now found a sausage-like tumor over the region of the abdomen, corresponding to the transverse colon. It was hard, unyielding, and painful on pressure. The woman had been "a dyspeptic for years," but suffered little pain from eating, and vomiting was rare except during the last ten days. There had never been any vomiting of blood. She had the characteristic carcinomatous cachexia, rapid emaciation, anorexia, and vomiting during the last five or six days, which with food or drink became aggravated. She could not retain over an ounce of fluid at a time, and rectal alimentation was resorted to, but with very poor success, as it created much pain and disgust. She had several more chills, but I ordered the nurse to abort them by the process already described. My diagnosis was carcinoma of the transverse colon and omentum, with adhesion of these organs to the abdominal wall. The reason for this diagnosis was, first, the resistance; second, the sausage-like tumor; third, the persistently chronic constipation. The temperature after the first chill remained above normal, ranging from 100 5° to 106.2.° The urine became scanty, and albumin and tube-casts were found on different examinations. The woman sank rapidly, and died fifteen days after I first saw her.

The autopsy revealed a most interesting condition, and in looking over the literature of the subject I find it is one of the rarest. The stomach was so contracted by a scirrhus that the total capacity was only three ounces. The omentum, transverse colon, stomach, and pancreas were all agglutinated in an almost inseparable, diseased mass. The gall-bladder, gall-ducts, and lower part of the liver were carcinomatous. The gall-bladder contained nothing but a small amount of mucus. The other organs of the body were normal. How life could be supported so long with so little disturbance remains a mystery to me. It is fair to presume that this stomach was practically of the same size and in the same condition for months before death. The woman died of asthenia or inanition, and was unconscious for an hour or two before death. I should add that she had a nodular mass in the left mammary gland, and several enlarged glands in the axilla. I am satisfied now that her chills were not malarial chills, but that they were due entirely to toxic agents in the blood, as a result of faulty excretion from the liver and kidney. Dr. William Osler thinks the phenomenon is probably due to diacetic acid.

MEDICAL PROGRESS.

Uretero-cystotomy Seven Weeks after Vaginal Hysterectomy.—At a recent meeting of the Johns Hopkins Medical Society, KELLY (*Bulletin of the Johns Hopkins Hospital*, vol. vi, No. 7, p. 27) reported the case of a woman with extensive carcinoma of the cervix uteri, for the removal of which vaginal hysterectomy had been performed. The disease had extended so far out into the broad ligaments that ligatures were placed at a greater distance from the cervix than usual. The woman recovered rapidly from the operation, but retained as a sequela ureteral fistula in the vault of the vagina near the middle of the cicatrix. From this there was a constant leakage of urine, although the urine accumulated in the bladder from the other kidney was passed in the regular way. With the patient in the knee-breast position and on the introduction of a cystoscope, it was found that the right ureteral orifice was obstructed; the left was free. An operation was undertaken for the relief of the condition and was much embarrassed by the obesity of the patient. The end of the ureter could not be found on the pelvic floor, on account of the rigidity and inflammation surrounding the line of scar-tissue between the rectum and the bladder. The right ovary and tube were also bound down to this scar-tissue by numerous vascular adhesions. The attempt to reach the ureter at this point was therefore abandoned, and it was sought at the pelvic brim, where it was readily found after lifting up the caput coli and incising the peritoneum and pushing aside the fat. It was then traced from the point of crossing the common iliac artery down to the pelvic floor, exposing the whole length of the pelvic portion by splitting the peritoneum over its surface. The anterior portion of the ureter was involved in the inflammatory material surrounding the scar, which bled so freely that no attempt was made to dissect it out. Four cubic centimeters of the ureter lying directly posterior to the scar-tissue were dissected out and the ureter lifted up from its bed and divided close to the scar, sacrificing as little as possible of its length. It was now found that the ureter could only be brought in contact with the bladder by traction, and that if it were sutured to the bladder the stitches would not hold. To overcome this difficulty the bladder was, with scissors and fingers, dissected free from its attachments to the horizontal rami of the pubis on both sides, and dropped down into the pelvis, so as to extend it and carry it more into the back part of the pelvis. In this way the ureter and the bladder were easily approximated without strain. A small incision was then made through the peritoneum of the bladder (which was covered with fat at least a centimeter thick) just large enough to receive the ureter snugly. The under surface of the ureter was then slit up for about four mm., and the caliber of its orifice enlarged, and with a pair of long delicate forceps introduced through the urethra, the bladder, and the incision, the ureteral end was caught up, drawn through the bladder and held until it was attached to the bladder by six fine interrupted silk sutures passed through the muscular tissue of the bladder and peritoneal and muscular coats of the ureter, beginning with the under side. The abdominal incision was closed down to its lower angle, where a narrow gauze drain was inserted for fear of leakage. To avoid raising the bladder and indirectly pulling upon the ureter, the peritoneum underlying the lower end of the incision was not drawn together. No leakage occurred, the drain was removed and the wound healed without suppuration. The urinary difficulties were immediately and completely removed, with perfect restoration of continence. At a subsequent cystoscopic examination the abnormally placed ureteral orifice was found opening into the posterior hemisphere of the bladder, into which it freely discharged its urine.

* * *

Cardiac Dyspnea—As the outcome of clinical and experimental observations, ZERNER (*Zeitschrift für klinische Medicin*, B. 27, H. 5 und 6, p. 529) has found that in voluntary forced respiration there results some loss of respiratory energy in consequence of the increased resistance encountered in the air-passages. In cases of cardiac dyspnea this loss is considerable: that is, the mechanical respiratory quotient, the relation between respiratory activity and the volume of air inspired, is diminished. The characteristic of cardiac dyspnea resides not in increased frequency and deepening of the respiration, but in respiratory insufficiency. This is due to the swelling and rigidity of the lungs, the latter of which acts more especially by interfering with the expansibility of the lungs, so that the amount of air inspired not only is not increased proportionately to the respiratory activity, but under circumstances may be absolutely diminished as compared with the condition present during rest. There is thus a distinction to be made between relative and absolute dyspnea. In cases of cardiac dyspnea, the increased resistance to the passage of air takes part in the reduction of the effects of the respiratory activity. The mechanical respiratory stimuli resulting from deficient oxidation of blood or increased muscular metabolism, and which are present in the blood, cause a deepening and increased frequency of respiration, and may thus affect the results of the respiratory activity by leading to increased resistance in the respiratory passages. The dyspnea resulting from bodily exercise is of cardiac origin, and its degree depends not so much upon the amount of exercise as upon the functional capacity of the cardiac muscle. The perfection of the effects of the respiratory activity may be considered an index of the functional capacity of the heart.

* * *

Damage to Vision Caused by Watching an Eclipse of the Sun.—BARRETT (*Ophthalmic Review*, vol. xiv, No. 161,

p. 30) has reported the case of a girl, seventeen years old, who for a quarter of an hour or more watched an eclipse of the sun, protecting her eyes with four pieces of colored glass, two being dark-blue and the others red and yellow respectively. These were placed before the eyes, with both of which the eclipse was watched. For an hour subsequently the girl was unaware of anything wrong with her vision, but then by accident she discovered that there was a mist before the left eye. There was nothing like an after-image, and no pain or discomfort. On coming under observation, two weeks later, there was complaint of a haze before the left eye, and the middle letters of words seemed to be missing. The field, as tested by the perimeter, was normal, except for the presence of a very small central scotoma, which measured at 50 cm. vertically 4 mm. and horizontally 3 mm., and at 5 meters 6 cm. by 5 cm., and had the shape of a nearly circular oval. At 50 cm. for a distance of 2 mm. around the scrotoma macropsia was noticeable. The right eye and its field were normal. The pupils acted normally and the media were clear; the fundi were healthy; the yellow spot in the left eye was a little larger than the right and a little darker in color, but hardly of a pathologic appearance. Three months later there was no change. With both eyes open the patient experienced no discomfort, as she was able entirely to ignore the scotoma.

The Respiratory Interchange of Air in the Newborn.—As the result of an extended series of observations DOHRN (*Zeitschrift für Geburtshülfe und Gynäkologie*, Band xxxii, Heft 1, p. 25) has found that the respiratory frequency in the newborn during the first ten days of life averages fifty per minute. It is the same for boys as for girls, and for premature as well as for mature children. No regular daily change was noted during this time. During the act of crying fewer inspirations occur than during undisturbed breathing. The average is forty-seven per minute as against sixty-two. The volume of air expelled with every expiratory movement averages 45 c.cm. The volume of air interchanged is alike in the two sexes, but is considerably below the average in premature children. The depth of the respiratory movements increases from the first to the tenth day, so that the volume of air expelled with every expiratory movement on the last day exceeds that of the first by 12 c.cm. This change results from the increased respiratory necessity, from the more free movement of the thoracic cavity, and from the increased accessibility of the bronchial tubes. The depth of the respiratory movement is exceedingly slight at birth and during the entire first day. It then increases considerably from the first to the second day, and more gradually in the subsequent days. There is, therefore, no reason for believing that perfect expansion of the pulmonary alveoli is effected by the first few inspirations.

Wound of the Femoral Vein Successfully Treated by Lateral Forcipressure.—COMMANDEUR (*Lyon Médical*, 1895, No. 14, p. 459) has reported the case of a man who suffered an injury in the right groin from the accidental explosion of a shell, a fragment of which was so firmly imbedded in the wound that its removal was attended with considerable difficulty. There was profuse hemorrhage, which was controlled by means of a tampon. On inspection, after the removal of the foreign body, it was found that the femoral vein had been lacerated and the lips of the opening were at once grasped by forceps. A second pair of forceps was placed upon what appeared to be the superior opening of the internal saphenous vein, which likewise was lacerated. To the lower extremity of the latter a ligature was applied. The wound was carefully cleansed, packed with gauze and the forceps permitted to remain. For a few days the temperature was slightly elevated, but on the seventh day it was normal. The forceps were removed on the fourth day, and there was no complication. No circulatory symptoms manifested themselves, other than when the patient arose there was slight edema for four or five days.

Syringomyelia with Perforating Ulcer.—At a recent meeting of the Clinical Society of London, MORGAN (*Medical Press and Circular*, No. 2916, p. 327) presented a case of syringomyelia in a man, twenty-four years old, who was well until the age of sixteen. At this time, after a chill, a perforating ulcer of the left foot developed, for which the leg was subsequently amputated. Six-and-one-half years later another ulcer formed on the right foot, which was in a position of talipes equinovarus with pes cavus. The muscles of the hands and arms were wasted, and failed to react to even the strongest faradic current, although they did to galvanism. Below the knee all kinds of sensations were lost, but in other parts of the body common sensibility was preserved with loss of the pain-sense and temperature-sense.

Unusual Mode of Transmitting Gonorrhea.—At a recent meeting of the Section of Genito-urinary Surgery of the New York Academy of Medicine, BROWN (*Journal of Cutaneous and Genito-Urinary Diseases*, May, 1895, p. 221) reported the case of a boy, twelve years old, who was infected with gonorrhea by an older boy through unnatural sexual gratification.

THERAPEUTIC NOTE.

The Treatment of Diphtheria with the Antitoxin.—At a recent meeting of the Société Médicale des Hôpitaux, D'ASTROS (*Münchener medicin. Wochenschr.*, 1895, No. 18, p. 434) related that among 322 cases believed to be diphtheria he had found diphtheria-bacilli in 194. In the cases of children that received prophylactic injections the temperature sometimes rose. In the case of menstruating women the uterine discharge was increased or hastened, a cutaneous eruption also often appearing. Pregnancy was not interfered with in the case of a woman in the fourth month. From December 15th to April 1st the antitoxin was employed in the treatment of diphtheria at the hospitals of Marseilles, with a mortality of 16 per cent. for cases of uncomplicated pharyngeal diphtheria, and of 30 per cent. for cases of laryngeal diphtheria; the total mortality was 23 per cent., as compared with 38 per cent., 89 per cent., and 50.05 per cent., respectively, in previous years.

D'ESPINE (*Revue méd. de la Suisse Romande*, 1895, No. 4, p. 177) has reported 60 cases of diphtheria treated in the hospitals of Geneva with the antitoxin, with 6 deaths (10 per cent.). Diphtheria-bacilli were found in all but 4.

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THE BALTIMORE MEETINGS.

WHILE there are certain results of the meetings just held at Baltimore last week that cannot be regarded with satisfaction, these sink into comparative insignificance when we make an account of the noteworthy gains and evidences of progress. One hardly knows which factor to emphasize as the most important, so nearly equal are several. The registration was over one-thousand, and the spirit of the members was also above the average in both moral and scientific earnestness. Surely, also, the beautiful spirit of Southern hospitality was well exemplified by the citizens and the profession of Baltimore.

If we may consider the function of teaching the teachers as fundamentally and in the long run the most influential, we should have to place as first in value the remarkable decision of the Association of American Medical Colleges as regards the proposition to postpone the inauguration of the four-year course until 1904. This was disallowed by the handsome vote of 31 to 5. Immediately after the vote three Louisville schools not heretofore members of the Association asked to be admitted to membership and signed the constitution. The colleges voting for the postponement were several of the Baltimore institutions mentioned in our issue of April 27th, and, if we mistake not, the Medical College of Virginia. It is thought that the Baltimore schools, at least some of them, will adopt the four-year course at once and retain their membership in the Association. One of the most prominent advocates of the postponement was heard to say, after the decision against him, that he was glad that the Association voted as it did. The highly praiseworthy action of the Association is significant and far-reaching. The fundamental condition of medical progress consists in a more thoroughgoing and scientific training of medical students, all other reforms being based upon this prerequisite. The lesser colleges can at best gain only temporarily by refusing to lengthen their courses in agreement with their competitors, and if all do so at once all must suffer or gain much alike. This action thus again proves that every cautious, firm advance in the line of medical progress cannot be undone. All honor to the Association!

The officers of the Association chosen for the ensuing year are: DR. OSLER, of Baltimore, President; DR. BODINE, of Louisville, First Vice-President; DR. HOLMES, of Chicago, Secretary.

As a teacher of the teachers, also, the AMERICAN ACADEMY OF MEDICINE has been for twenty years an influence not to be underrated, however much ignored and even despised in certain quarters. Never before has this body taken such a clear and earnest stand for all noble medical reforms, and in a most practical and needed manner. Under the able presidency of DR. HURD the next meeting of the Academy may be expected to develop further its new fields of medical sociology, the general relations of the profession to the public, and especially to the dependent classes.

The most tangible advance made is the action of the Trustees of the American Medical Association in ordering the exclusion of nostrums from the advertising pages of the official organ. This decision, reached, as we are informed, some time prior to the meeting, is "almost too good to be true"—as one said of it, and we most sincerely congratulate the Trustees and the medical profession upon it. Without such a decision all our attempts to rid the advertising (and even the editorial) pages of medical journals, owned or controlled by laymen, of unethical and offensive advertisements, would continue to be unavailing, because we would always be met by the unanswerable logic, "If you can't keep your own professional organ clean of these obnoxious parasites, what earthly right have you to ask us to do so with our journals? We can hardly be expected to be more professional and ethical than your own selves." The American medical profession has no higher obligation than unity and support of and pride in its official journal. It now becomes our duty to make the reform determined upon a practical reality and to extend it slowly to all journals that claim for themselves the right to be called medical. Speed the day!

And again let the day soon arrive when, as Dr. Davis powerfully said, the pestiferous fellows who wish everlastingly to "amend" the constitution and the Code in the interest of the commercialization of medicine shall be reduced to permanent silence. This apparently immortal and disgusting desire to tinker with the Code should once and for all have an end. By the unanimous enthusiasm of the vote against the professional instrument-makers and their effort to get us to permit them to patent their devices, we should think these gentlemen might for the last time be taught the needed lesson that professional sentiment is forever determined against this cantankerous and purblind selfishness.

With these and other splendid evidences of professional opinion before us it might seem that we should be satisfied. But the poor we have ever with us—the poor politicians, those poor in the sense of modesty and of gentlemanliness. Perhaps at this meeting "the all-night men" were more conspicuous by their increased exceptionalness, but they were still sufficiently in evidence. Let us hope, also, that the day may not be far away when scheming for office shall be instantly recognized as the most decisive proof of unfitness for the office desired. One wonders how a man can think an official position is an honor that he has gained by "pipe-laying," personal solicitation of votes, and by all the wiles and arts of a Tammany politician. There are dignity and honor in office only when spontaneously offered by one's fellows, and in our future choice of men to represent us let us lay down the absolute condition that "wire-pulling" and personal candidacy shall debar a man from any consideration whatsoever. We make no specific allusions, because we wish to disregard all personalities; we speak only on general principles and from the point of view of professional dignity.

The selection of Atlanta, Ga., as the place for the next meeting is eminently satisfactory.

THE LOCAL ABSTRACTION OF BLOOD.

The apparently steady decrease in the employment of local bleeding is a fact that must impress anyone who compares the methods of treatment advocated in older, as compared with more recent, text-books upon medicine and surgery. While in former times much false reasoning in regard to the nature of diseases was prevalent, yet it must be granted that as observers and word-painters of disease our predecessors equalled or outranked the writers of the present day. Aside from those elements that are dependent upon more refined methods of diagnosis, the descriptions of diseased conditions in some of the older text-books on medicine could not possibly be improved upon. Being careful observers, as their accounts of diseases would show, it is highly improbable that the descriptions given as to the immediate results of treatment would err, save only in that they might fall into the error that is by no means unknown even in the present more enlightened period, of attributing to the administration of drugs results the credit for which should have been given to nature.

These worthy observers laid much more stress upon the local treatment of disease than do their descendants, and for various reasons. With regard to the local abstraction of blood, the apparent virtue of the measure was enhanced by the value attached to the general use of venesection in the treatment of general diseases. The good effects that were by them supposed to result from withdrawal of blood from the general current in systemic diseases naturally suggested the propriety of local abstraction in local troubles, although, of course, the comparison was by no means justifiable. Again, in regard to many local conditions, more prolonged observation and improvements in methods of examination have led to a much more thorough knowledge of the actual causation of disease and the mutual interdependence of various pathologic processes, so that under many conditions in which local bleeding was formerly employed, it is now realized that the measure could avail but little. Of late years, also, surgical procedures have become justifiable that would at one time have been considered, and justly so with the surgical technique of former times, absolutely criminal. On that account many local lesions, now operated upon with impunity, being unamenable to medical treatment, had to be combated with the local measures at that time justified. Operative procedures in the case of many local lesions being formerly impracticable, it was even more imperative than at present to check the local process at its very incipiency.

That the local abstraction of blood in local disease was at times of advantage cannot be doubted. Is it not possible that at present this method of treatment has fallen into undeserved neglect? So much is possible to surgeons of the present day, and so much greater certainty in their work is attainable, that we may be led to neglect lesser measures of relief on account of the feeling of confidence in the surgeon's ability to handle the gravest local conditions with comparative safety to the patient. For example, in inflammation of the abdominal organs it is now felt that, when the local lesions have limited themselves, it is possible for the surgeon in many cases to open the abdomen and remove the diseased tissues. Consequently the question of treatment is often narrowed down to that of the timeliness of operation rather than to the question of endeavoring to avoid the necesssity for such interference. Before the abdomen could be opened with any degree of impunity patients certainly did recover after the use of local external treatment, and while the ghost of the modern surgeon might taunt the shade of the physician of the last century with having lost many a case of appendicitis that had been consigned to its grave as a case of "peritonitis," so the ghost of the old-fashioned surgeon might retort to the shade of the modern physician that he at least made some attempt to treat his cases of peritonitis and had saved some from reaching the point for surgical interference, and had relieved many suffering from troubles that even the modern surgeon could not cure.

It is sometimes urged that the abstraction of blood from the skin and the structures lying immediately beneath it cannot influence the deeper-seated organs, owing to the independence of the blood-supply of the parietes and the subjacent viscera. Theoretically it is difficult to understand exactly what occurs as a result of the local bleeding, but practically it cannot fail to impress itself upon one that such independence is more fanciful than real, when some of the happy results of local bleeding are witnessed. The application of a leech to the painful area in pleurisy will oftentimes relieve the pleuritic stitch at once, and yet the overlying skin and the pleura are not directly connected as regards their blood-supply. The relief afforded to the dyspnea and distressing cough in pneumonia, as well as the apparent checking of extension of the process by the application of cups to the surface of the chest, can be explained in no other way than by a supposed modification of the circulatory conditions in the diseased lung, although the pulmonary parenchyma has a circulatory network almost entirely disconnected from that of the skin. That the effect of superficial extraction of blood by leeches extends far below the surface is shown by the deep hemorrhagic infiltration of the subjacent tissues, when, as for example in appendicitis, a resort to operative interference is required after the failure of leeches to subdue the trouble—a source of possible embarrassment to the surgeon, to be remembered in choosing a site for leeching in cases in which operative interference is uncalled for or is impracticable at the time when the local bleeding is practised.

If such results are obtainable by external treatment in diseases of the deeply situated organs, much more benefit is presumably to be derived from the local abstraction of blood when the part to be affected is more closely connected with the surface by blood-supply. The mode of action is here more easy of explanation. One of the early and most important stages of inflammation being the engorgement of the bloodvessels of the part, it is easily to be seen how the direct abstraction of blood will not only relieve pain, but will also tend to lessen the extent of inflammatory damage. It is not unreasonable to suppose that the application of a leech or two to the angle of the jaw for the relief of the pain in quinsy acts in the same way as does the more direct method of puncturing the inflamed structures. The almost immediate relief of the objective signs of inflammation in various diseases of the eye that follows the application of a leech to the temple shows more plainly the good effects of bleeding from a neighboring part. So, also, may prompt relief be afforded by the application of a leech over the position of the spermatic cord in cases of orchitis or epididymitis, or over the mastoid in cases of inflammation of the middle ear. In many of the lesser injuries to bones and joints the application of a few leeches will not only lessen the pain, but may also diminish the time required for recovery and the extent of subsequent damage resulting from inflammation.

The local abstraction of blood is, it is to be feared, too often forgotten as a therapeutic measure at the present time, when so much that is new is being furnished for consideration and so many novel measures are being brought forward as means of combating disease. It, however, certainly served our fathers well and is to be remembered, not on that account, but because it is a method of treatment that neither interferes with nor is entirely superseded by some of the measures more recently introduced and consequently more constantly before the mind. Tablet-triturates of phenacetin may relieve the pain of a congestive headache or an inflammation of the middle ear, but their use should not exclude the employment of the more rational, although more antiquated, methods by the use of laxatives in the former and the local abstraction of blood by the leech in the latter instance.

EDITORIAL COMMENTS.

The Incompatibility of Regular Physicians and Sectarians.—It is evident that the English medical profession has no greater confidence in the so-called homeopathic practitioner than is accorded him by regular physicians in this country. Learning that at least one of the metropolitan medical societies comprised some so-called homeopathists amongst its members, the *Lancet* was led to address letters to the honorary secretaries of thirty-six medical societies, eighteen London and eighteen of the leading provincial ones, asking for information, first, as to whether any avowedly homeopaths were members, and, secondly, whether any rule or regulation existed with reference to the admission or exclusion of homeopaths. Replies were received from sixteen of the London and fifteen of the provincial societies, and the information was strikingly uniform. With but two exceptions, the first question was answered in the negative, while only one of the London societies and one of the provincial societies have rules against the admission of homeopaths as members. The first has always had the excluding regulation in its By-Laws, and it is now proposed to make this By-Law read as follows: "Subscribing members must be duly registered medical men, but no one shall be a member or eligible for election as such who is practising as a homeopath, or engaged in carrying on, or assisting in carrying on, any form of irregular practice, or who is resorting to any methods for procuring patients or practice which is derogatory to the practice of medicine, surgery, or obstetrics as a profession. And the Council shall have power at any time to remove from the roll of the Society the name of any member who shall be proved to have trangressed or to be transgressing this law."

The *Lancet* goes on to say that it is not on the ground of tenets alone that the homeopaths should be excluded from a properly regulated medical society. "The fact is that the practice of homeopathy in the strict sense is as infinitesimal as its dosage. What the profession generally have to complain of, what they justly resent, and the ground upon which they are right to decline co-operation, is that in practising, as he is bound to do in every department except the limited one of drug-treatment, the homeopath follows the canons of medical and surgical practice as universally laid down. He calls himself a homeopath and maybe joins the staff of a homeopathic hospital, but for all that is done in that hospital—or, for the matter of that, out of it, too—the cognomen has no real meaning, except in so far as it deludes a public only too ready to be impressed by every fanciful medical theory."

This proposed action is in striking contrast with the disposition manifested by some members of some of our own medical societies, who hope to remove the differences between the regular profession and the sectarians by admitting the latter to membership and removing existing restrictions as to consultations.

A Curious Ruling.—We note the following curious decision on a case of drug-adulteration in England. Diluted acetic acid of the *British Pharmacopeia* was ordered, and the druggist dispensed an article decidedly stronger than the official preparation. The English Food and Drug law does not define standards of purity or strength, but requires that the article sold shall be "composed of ingredients in accordance with the demands of the purchaser," or of the "nature, substance, and quality demanded." The magistrate held in the case that since the purchaser got more of the active ingredient than was called for there was no suggestion of fraud or carelessness, and observed that "it would be well if tradesmen generally would emulate the defendant's conduct and give their customers, if possible, a better article than paid for." It is not to be wondered at that the editor of *Food and Sanitation*, from which journal we take the notes of the case, considers it necessary to animadvert strongly upon such view and to say that it will be hard to imagine a more dangerous or absurd doctrine. Indeed, it is difficult to see how any person could come to such a conclusion when the records of medical practice and toxicology exhibit so many instances of serious and even fatal accidents from overdoses of powerful drugs.

The magistrate's opinion is, doubtless, in part based upon the thought that the stronger drug costs more, either in material or in labor, but this is frequently not true. The preparation of a solution of accurate strength, especially with such a substance as acetic acid, which is very inconvenient to weigh out in the pure form, is always more wasteful of time and material than a rough approximation. The decision is another evidence of the difficulty of bringing law and science into accord on general principles affecting public health.

Decisions in re Expert Testimony.—The New York Court of Appeals, in refusing to concur in an appeal made in the Buchanan case, took occasion recently to animadvert somewhat severely and justly upon the character of some expert testimony submitted. It will be recollected, no doubt, that the trial attracted unusual interest from the manner in which certain eminent experts in toxicology were in part discredited by experts called by the defence and by severe cross-examination by an attorney who had been a medical student. It was not, however, upon this phase of the case that the court passed. After the case had been given to the jury, a juror was taken ill while at dinner and fainted. Physicians who attended the man and had known him for some time testified that the condition was merely one of nervous exhaustion, and that there was no evidence of epilepsy or paresis. The defence, however, being desirous of proving that the juror's mental condition had for a time been defective, hoping thus to secure a new trial, called experts who had not seen the patient or known him previously, and had learned of the nature of the attack by hearsay only, who testified that the attack was of an epileptic character and that the disturbance must have existed for several hours and rendered his mental action unreliable and useless. The reporter of the decision properly observes that the case shows how unreliable is the testimony of the average expert, especially when he has a pecuniary interest at stake.

The Supreme Court of Arkansas has recently decided that in the absence of express statutory authority an expert who testifies in a criminal case cannot demand compensation in addition to the statutory witness-fees, at least when he is not compelled to make a preliminary examination or to listen to testimony.

People's Baths for Philadelphia.—Philadelphia is to be congratulated on the prospect of shortly having a people's bath, modelled after a similar institution that has for several years been in effective operation in New York City. A number of prominent citizens have organized an association whose object is the erection of bath-houses in different parts of the city, and particularly in localities accessible to the poor, in order to afford the masses facilities for perfect bathing at a nominal cost during the winter as well as during the summer. For several years the city has had a number of free baths, but these are open only during the hot term, and are not attractive to those somewhat raised above the level of the lowest classes. Already the sum of $25,000 has been subscribed, and a plot has been purchased on which will be erected the first bath-house, at a cost of about $16,000. It is contemplated to build five others. All are to contain numerous small rooms, provided with the requirements for a luxurious bath. To each building also will be attached a laundry for cleansing clothing at a small cost. Subscriptions to the amount of $60,000 will be solicited. After the usefulness of the project has been demonstrated it is proposed to ask Councils to appropriate sufficient money for the actual support of the bath-houses, although the association will retain control of their direction. This venture is a step in the right direction, and should receive the most cordial support and encouragement, as it must prove of inestimable service in furthering both the moral and the hygienic welfare of those for whom its benefits are intended.

The Visiting Nurse Society of Philadelphia.—A useful organization, of whose work too little is generally known, is the Visiting Nurse Society of Philadelphia, which employs a corps of trained nurses to care for such patients as absolutely need attention and are compelled to remain at home, but cannot afford to pay for the full time of a trained nurse. To those unable to pay nurses are furnished without charge. Under the instructions of physicians these nurses will bathe patients, make local applications, apply surgical dressings, make observations upon temperature, pulse, respiration, secretions, etc., and keep the necessary records. The Society keeps, besides, a registry of inexpensive nurses who are not hospital graduates, but have had some experience in nursing. During the year covered by the Ninth Annual Report, just issued, a total of 15,611 visits were made by the nurses of the Society, for but 372 of which some compensation was paid. The Society needs money to pay the nurses and to defray the expenses of keeping the house in which they live, to purchase medicines, apparatus, and articles of food for use in suitable cases, and to provide linen, clothing, bandages, bedpans, etc. The work of the Society is an important one and should be cordially supported. The treasurer is Mrs. A. P. Brubaker, 105 North Thirty-fourth Street.

A Suggestion as to the Nomenclature of Pregnancies.—Occasionally one sees in medical writing the terms: ii-para, iii-para, iv-para, v-para, etc., used to designate a multipara in her second, third, fourth, or fifth pregnancy. If one looks in the dictionaries for this unconscionable barbarism, he has, of course, his labor for his pains. Lexicographers are great sinners, but there is a limit even to their natural and acquired depravity. If one is reading aloud to a friend and runs afoul of this indescribable somewhat, the pronunciation of it becomes a combination of silence, smile, and disgust, in equal parts. If in a lecture one wishes to speak of the fact it must be done by means of a descriptive circumlocution. It seems strange that the remarkable fecundity of the medical philolologists has not been equal to the emergency of devising names for these simple facts, instead of designating them by an unpronounceable monstrosity. It is with proper fear and trembling that we suggest coinages made upon the same plan as similar words accepted and in general use. Possibly this has already been done. We now have the words *nullipara*, *primipara* and *multipara*. Why should we not also have Duipara (or deutipara), Tripara, Quadripara, Quintipara, Sextipara, Septipara, Octipara, Nonipara, Decipara?

Glucose as Food.—In a comprehensive article read before the New York Section of the American Chemical Society (*New York Medical Journal*, April 20, 1895), Dr. E. H. Bartley justly criticises the long-accepted opinion that commercial glucose is suitable as a food. This opinion was promulgated some years ago by a committee of American chemists appointed partly under Government auspices, and has been made the basis for justification of much substitution and adulteration. In the same way the opinions of some eminent chemists in favor of oleomargarin have been extensively quoted in defence of that article. Dr. Bartley points out that mere chemic knowledge or even experiments on the lower animals or healthy subjects for a brief period are not sufficient to establish the harmlessness of a substitute food. Glucose made from starch by the action of acid is not the same as the product of digestion by animal ferments, and it is not likely that it will be a satisfactory substitute for the forms of sugar that arise in the process of normal digestion.

The American Medical Editors' Association, at its meeting in Baltimore, elected Dr. George M. Gould President; Dr. A. H. Ohlmann-Dumesnil, Vice-President; and Dr. H. Bert Ellis, Secretary.

SOCIETY PROCEEDINGS.

AMERICAN MEDICAL ASSOCIATION.

Forty-sixth Annual Meeting, Held at Baltimore, Md., May 7, 8, 9, and 10, 1895.

(Special Report for THE MEDICAL NEWS.)

GENERAL SESSION.

THIRD DAY—MAY 9TH.

(Continued from page 536.)

DR. C. A. WHEATON, of Minnesota, delivered the

ADDRESS ON SURGERY.

A retrospective examination of surgical literature since the advent of anesthesia, Dr. Wheaton said, does much to make the thinking student wonder whether the longevity of the human family has been conserved or its physical welfare materially enhanced by modern surgery. He asked: Has not our feeling of safety, engendered by our acknowledged perfection in surgical detail, opened a wide field of surgical speculation and experiment that serves rather to enrich the surgeon than to minimize disease and prolong life? In the opinion of Dr. Wheaton the segregation of our professional work is in a large degree responsible for much of the opprobrium that attaches to the over-zealous pursuit of a given theory or special method of performing an operation whose only excuse for being done is the desire to elaborate a hobby. He eulogized, however, the achievements of a score of brilliant men whose work had been instrumental in placing surgery in its present advanced position. In preparing himself to become a surgeon a person should obtain a thorough knowledge of all the collateral arts and sciences that bear intimate relations to his lifework. Dr. Wheaton expressed it as his belief that the specialist of the future, no matter what avenue he may elect to follow, should be a regular graduate in all the branches of medicine, and should serve a sufficiently long period in the field of general medicine to raise him above the level of mediocrity before he assumes to pose on the witness-stand as an oracle in nervous diseases or at the bedside to advise for or against an abdominal section.

Deep regret was expressed at the decline of the family physician. How true the time-honored quotation from the early Sanscrit, "a surgeon not a physician is as a bird with one wing," if the surgical growth be not symmetric.

The cerebro-spinal axis has attained a prominent position in the forefront of latter-day surgery, as a result of the painstaking, untiring labor of such men as Ferrier, Horsley, Thorburn, and others, abroad, and a goodly array of fellow-workers on this side of the Atlantic. The physiology of the brain and cord is beginning to be understood, and fitting surgical remedies are at hand to combat successfully these diseases. Craniectomy for microcephalus is of doubtful value, and its legitimacy may be fairly questioned.

Laminectomy for the paralysis of Pott's disease is an operation in much less favor than formerly; although it undoubtedly has a place in surgery when applied to paralysis as the result of trauma resulting from fracture, hemorrhage, or inflammatory pressure; but otherwise, the limitations of its usefulness are very circumscribed. An infinity of surgical procedure has been suggested and practised for epilepsy, but, except as applied to the disease when of traumatic origin, all are of doubtful utility. One exception, possibly, may be taken to this statement, namely, in occasional cases of well-marked focal or Jacksonian epilepsy. Excision of the Gasserian ganglion for trifacial neuralgia is a comparatively recent acquisition to our list of operations. Its environments are such as to make the removal of this ganglion of the greatest surgical difficulty, and will be rarely undertaken except under the most trying conditions.

In the departments of ophthalmology and otology the alarming frequency of graduated tenotomy and indiscriminate angling for the ossicles is gradually being displaced by a more rational treatment. Reference was also made to the excessive activity in naso-pharyngeal surgery.

There has been little change in the surgery of the tongue, jaws, and face in the past decade, except in the improvement in our plastic work about the face, aided by the Thiersch method of skin-grafting. Esophageal surgery has materially increased its boundaries since gastrostomy has become an operation of comparative safety. Drainage of pulmonary cavities and operative invasion of the mediastinal spaces are, fortunately, rarely a necessity. Favorable reference was made to Professor Halsted's recently devised operation for malignant disease of the breast.

A preference was expressed for gastro-intestinal anastomosis rather than the various methods of pylorectomy, as being vastly more humane, while contributing equally to the patient's comfortable longevity. The gall-bladder has attracted much attention in the past few years. When an anastomosis between the gall-bladder and duodenum becomes necessary a most useful adjunct is the ingenious device of Murphy, which has also been found of great value in operations of emergency in which lateral approximation of the intestinal canal becomes a necessity. Its relative value in end-to-end anastomosis is still a mooted question.

To the surgeon, who is brought in frequent contact with appendicitis at the operating-table, and who has so often seen its frightful ravages, "under cloak of modest mien," this subject is one of never-ending interest, and its presence of anxiety. The turning tide in favor of honest conservatism in the surgical management of disease within the female pelvis was hailed with gratification. Vesical, ureteral, and renal surgery has received a recent impetus at the hands of Dr. Howard A. Kelly.

Reference was made to the operation of castration for senile enlargement of the prostate gland recently proposed by Professor White, of Philadelphia. In the words of Dr. Wheaton "when his comprehensive review of the subject is digested, and we see his deductions and results corroborated by many of the most distinguished teachers in all parts of the world, we are constrained to give the subject serious thought. It is difficult to understand why the removal of functionally inert testes should cause atrophy of the prostate, but that such a result does follow is established by incontrovertible proof." He expressed a sentimental prejudice, however, against the operation.

Although the literature of the radical cure of hernia is filled with remarkable records, the operation is still not to be recommended when a properly fitting truss will satisfactorily retain the hernia.

The progress of orthopedic surgery was briefly discussed, and the opinion expressed that the present tendency is again toward natural conservatism.

A resolution to increase the annual dues one dollar, which amount would be applied to a building fund, and when sufficient has been accumulated, to erect and maintain a suitable building in Washington, D. C., for the purpose of holding the meetings, and for such other uses of the Association as might be determined upon, was indefinitely postoned.

A motion was carried to lay upon the table the motion made at a previous meeting in reference to amending the Constitution.

A resolution offered by Dr. Keller, that the Nominating Committee should hereafter make their report on Thursday morning, immediately following the reading and adoption of the minutes, was referred to the Business Committee.

The resignation of Dr. Stoner as Chairman of the Committee of Arrangements was received and accepted.

A motion was carried instructing the Committee to fill the vacancy and to elect from their number a chairman.

DR. BEVERLY COLE, the newly elected President of the Association, was escorted to the platform and introduced. In a brief address he thanked the Association for the honor which they had conferred upon him in calling him to that position.

GENERAL SESSION.

FOURTH DAY—MAY 10TH.

At the meeting of the general session, called to order at 10.30 A.M., the reading of the minutes of the previous morning session was dispensed with. On motion of Dr. Clark, they were approved without reading. The

ADDRESS ON STATE MEDICINE

was delivered by H. D. HOLTON, of Vermont.

He said that State medicine is of comparatively recent origin. Following in the steps of Rush, earnest men, filled with philanthropic desire to improve the status of their fellows, have worked together to diffuse the knowledge they have gained by careful research among the people, until our whole nation is permeated with the leaven of preventive medicine. Now, every State in the Union, except three, has its health-department, established by legislative act, which is doing its own peculiar work, diffusing to a greater or less extent in the respective States a knowledge of personal hygiene, and exercising the powers delegated to it to prevent the spread of epidemic and contagious diseases. These State boards are to be commended for the great and good work they have done, and for their enthusiasm, patience, and perseverance in the delicate duties that have devolved upon them. They should be composed of experts, trained by education and experience in the best and latest sanitary knowledge and the methods of applied hygiene. More money is expended annually in the various States for the support of the militia than for the support of their health-departments. As a result, the State boards have been cramped in their efforts, and hence arises the desirability of a necessity for a National Board of Health, presided over by a Secretary of Public Health. The bill now before Congress should be amended by providing for an advisory board of one member from each State and from the medical corps of the army, navy, and marine-hospital services. Such an arrangement would render the scheme more practical and more popular. This Advisory Board would only meet at the call of the Secretary of Public Health. The press of the country should be educated up to this point. It is certain that the safety and welfare of the people of this country and the interests of commerce demand the establishment of a uniform system of quarantine under the control of the Federal Government; but while the necessity of national government should be urged with all zeal, the work of local boards in our large ports of entry and the able and thorough efforts in this direction of the marine-hospital service should be held in grateful remembrance. The more general adoption of bovine lymph in place of arm-to-arm inoculation was recommended. The National Health Bureau, when established, should produce a pure vaccine-lymph under the most careful aseptic conditions and forward it to State boards free of cost. Valuable curative and preventive serums are being produced by scientists, and it should become the duty of the National Bureau to assume control of such proceedings and provide reliable and aseptic antitoxins. Governmental investigations of the transmissibility of tuberculosis through the milk of infected cows is a matter of serious import. The question of proprietary medicines is an evil that, in spite of the continuous maledictions that have been hurled against it by all scientific medicine, has continued to thrive, until at the present time it is intrenched behind millions of money, and is held in high esteem by the people because of its ability to hide its worthless character or possible dangerous combination behind a trademark. If the manufacturers of these nostrums were obliged to deposit with the Public Health Department, under certain restrictions, the formulæ from which their preparations are made, a great step will have been taken to eradicate this stupendous swindle.

A vote of thanks was extended to the reader of the paper.

DR. J. B. HAMILTON offered the following:

Resolved, That hereafter the permanent Secretary and Treasurer of the American Medical Association proceed to the place of meeting one day in advance in order to facilitate the work of registration and other preliminary matters.

Carried.

DR. WILLIAM OSLER handed the Secretary the following:

Whereas, The continuance of the publication of the *Index Medicus* is jeopardized by lack of funds, be it

Resolved That hereafter the members of this Association contribute to the continuation of the publication until such time as more permanent arrangements can be made.

Carried.

The report of the Benevolent Association was read and accepted, and the Committee was continued, with the request that it report at the next meeting of the Association some feasible plan for the founding of a home for destitute physicians and their widows.

The officers chosen for the ensuing year are:

President—R. Beverly Cole, of San Francisco.

Vice-Presidents—1st, J. J. Chisolm, of Baltimore, Md.;

2d, J. C. Le Grand, of Anniston, Ala.; 3d, A. P. Clarke, of Cambridge, Mass.; 4th, T. P. Satterwhite, of Louisville, Ky.

Treasurer—Henry P. Newman, of Chicago.

Secretary—W. B. Atkinson, of Philadelphia.

Librarian—George E. Wire, of Chicago.

New Members of the Board of Trustees—Alonzo Garcelon, of Lewistown, Me. (re-elected); I. N. Love, of St. Louis, Mo. (in place of P. H. Millard); James E. Reeves, of Chattanooga, Tenn. (in place of J. W. Graham).

Judicial Council—William M. Welch, of Philadelphia (in place of John B. Roberts); D. W. Smouse, of Des Moines, Iowa (in place of J. M. Emmert).

To Deliver the Annual Addresses—N. Senn, of Chicago, on Surgery; William Osler, of Baltimore, on Medicine; George H. Rohé, of Baltimore, on State Medicine.

Chairman of Committee of Arrangements—W. F. Westmoreland, of Atlanta, Ga.

Place of next meeting, Atlanta, Ga.

Date of meeting, the first Tuesday in May.

SECTION ON PRACTICE OF MEDICINE.

THIRD DAY—MAY 9TH.

DR. J. M. ANDERS, of Philadelphia, read a paper entitled

A STATISTICAL STUDY OF THE COMPLICATIONS OF MALARIA.

He analyzed 1780 cases with reference to their complications, which were noted in 189 instances, or 10.7 per cent. The cases were classified into: intermittent fever, 1434; remittent, 74; malarial cachexia, 27; chronic malaria and irregular types, 22; unclassified, 222. All instances in which an element of doubt existed were eliminated. The complications of malaria, while as frequent as those of some of the other acute infective diseases, are somewhat peculiar in character and on the whole not grave in nature, as was illustrated by a list of the complications of most frequent occurrence, prominent among which were heart-disease, enteritis, neuralgia, albuminuria, pleurisy, rheumatism, pulmonary tuberculosis, typhoid fever, etc. Dr. Anders agreed with the opinion that malaria promotes the development of pulmonary tuberculosis. Pleurisy is more frequently due to secondary infection, and is to be regarded as a genuine complication. Rheumatism is a not uncommon concomitant of malarial toxemia. Among the 1780 cases of malaria analyzed there were only five of lobar pneumonia and one of catarrhal pneumonia.

There is a class of cases in which both malaria and typhoid fever are met with in the same individual simultaneously. The relationship, however, cannot be close, nor is the compound affection due to a third extraneous "compound agent," but to the effects of two pathogenic organisms in one body at the same time.

A careful blood-examination in cases of suspected typho-malarial fever would show many to be instances of pure typhoid fever, chills and sweats and intermittent temperature-curve being sometimes observed in typhoid. When the temperature-curve is of the intermittent type from the commencement, the course of the affection is usually favorable.

DR. ROCHESTER emphasized the fact that true lobar pneumonia is exceedingly rare in association with malarial fevers, and that there are cases of typhoid fever in which the temperature does remit.

DR. HOLLISTER stated that in malaria, as in other diseases, the manifestations are sometimes far more serious during the winter than during the other seasons.

DR. ANDERS stated that pleurisy and rheumatism are, comparatively speaking, frequent complications of malaria, although no reference to this is made in text-books or literature upon this head.

DR. J. H. HOLLISTER read for DR. ROBERT H. BABCOCK, of Chicago, a paper entitled

THE CONDITION OF THE TWO VENTRICLES WITH REFERENCE TO THE ADMINISTRATION OF DIGITALIS.

Two cases were reported, in the first of which there was great dilatation of all the cardiac chambers, particularly of the right ventricle. The administration of digitalis was followed by two alarming sinking spells, requiring the free use of stimulants. Strychnin nitrate, nitroglycerin, 1 per cent.; whisky, and a hydragogue cathartic were followed by steady improvement. In the second case there was moderate dilatation of the left ventricle, accompanied by cough, dyspnea, and rapid, feeble pulse. Digitalis relieved all the distressing symptoms. It was contended that these cases furnished clinical evidence that digitalis may fail to affect favorably the right ventricle in cases in which a tonic is most urgently demanded, and that the indications for the administration of this drug and its congeners depend upon the relative condition of the two ventricles.

DR. W. T. ENGLISH, of Pittsburg, Pa., read a paper entitled

CARDIAC INSTABILITY DUE TO ACID AUTO-INTOXICATION.

He stated that he had encountered in his experience repeated and tangible evidences of abnormal heart-phenomena resulting from acidulous conditions, as evidenced by lowered alkalescence of the blood. It is very generally admitted that a large excretion of acids is contemporaneous with an irritable condition of the heart and circulatory apparatus. The period at which the most lamentable accidents in heart-lesions occur corresponds to the hours when the acid tide is highest: during the quiet of the night. The conclusion was reached that acids should not be employed freely or promiscuously in food or drink, as in most cases they act as irritants to the circulatory apparatus, this fact being especially noted in cases of heart-weakness or circulatory lesions. The principal demand upon the physician is for oversight of the ingesta. In numerous cases the employment of alkalies and antiseptics will be required to overcome acidity and fermentation.

DR. ASA F. PATTEE, of Boston, read a paper upon the

THERAPEUTICS OF THE SENILE HEART.

He pointed out the fatality of excessive eating and drinking in cardiac troubles. He advised wearing during the summer light-weight silk underclothing, with a light-weight cotton and wool shirt over this; in winter the clothing should be of medium weight. Only warm baths should be used. Aspiration from the scrotum (and in women from the labia) was advised when there is considerable ascites.

Dr. Rochester stated that if the left ventricle was found to be acting strongly, in comparison with the right, this would seem an absolute contra-indication to the use of digitalis. He granted that there is no question that there are numerous acids produced in the body creating cardiac instability, but thought it was pushing the matter too far to say that this was the cause of sudden death from cardiac instability, as there are so many factors that enter into the production of a weak heart, toxemias of various kinds, etc. He emphasized the necessity for careful investigation of the excretions.

He believed that the trend of medical thought is to simplify treatment and find the actual physiologic action of drugs before giving them. He considered that stimulants were not contra-indicated in the senile heart, and thought it of importance that the heart should be considered in relation to the rest of the body, particularly the capillary circulation ; if the vessels in the capillary circulation are found hard and thick, as is usual in advanced years, this should be relieved by baths and friction. The main thing in old people is to watch carefully the capillary system.

Dr. H. B. Sears, of Wisconsin, expressed the opinion that digitalis should not be given when there exists edema or ascites, until this is relieved by aspiration. He believed that favorable results could be obtained in edematous cases by purgatives, followed by heart-tonics, as by tapping the scrotum or labia and then giving tonics.

Dr. Chapman, of Louisville, Ky., reported that he had made careful examinations in twenty-five or thirty cases of rheumatism, and found that lactic acid was always present. He inferred that, as in nearly all cases of rheumatism there is valvular disease of the heart or endocarditis, if lactic acid is the cause of the rheumatism, then it is also the agent in rheumatism that causes the heart-lesions.

Dr. Stockton opposed the theory that cardiac disease is caused by acid in the blood, and criticised the statement that lactic acid is commonly found or that it has anything to do with the matter whatever.

Dr. Webster, of Chicago, called attention to the distinction between vegetable and mineral acids, stating that the giving of vegetable acids increases the alkalescence of the blood. He approved and emphasized the statement that the presence of acids in the circulatory system increases the blood-pressure, thus adding to the work of the heart and causing either hypertrophy, or, if sudden, fatigue. He did not believe that death is ever caused by auto-intoxication under otherwise healthy conditions.

Dr. Albert E. Herne, ot Indianapolis, Ind., read a paper on

TOXICITY IN THE PRODUCTION OF NERVOUS DISEASES,

which he illustrated by a number of specimens under the microscope. He stated that the degenerations of both the central and peripheral nervous organs are in a great measure due to the effects of certain discovered and undiscovered toxins. This result may take place after an extended period of time or immediately. Dr. Herne made the following propositions : 1. We find as sequelæ of affections of known microbic origin inflammations and, secondarily, degenerations in both the central and peripheral elements. 2. After and during the course of such illnesses as may justly be supposed to be due to bacterial invasion we find characteristic symptoms from the side of the nervous system, denoting organic disease of its tissue. 3. By analogy we may infer that both of the classes of disorders named are due to the effects of the microbes themselves or of the poisons produced by them. 4. This analogy is given as follows :

(*a*) The inflammations and degenerations found in the nervous tissues as the result of toxins of non-microbic character, and (*b*) those notably due to the presence in the nerve-elements of micro-organisms or their products.

We know that certain parts of the body show a decided affinity for certain pabulum. How it is that different parts of the nervous system possess marked affinity for certain toxic agents it would be difficult to determine. That such an affinity exists cannot be denied. How else can we explain rationally the predilection with which lead attacks the radial group, or the diphtheric toxins certain nerve-territories. Functional overwork undoubtedly plays no inconsiderable *rôle* in this selective and elective play, but some peculiar chemic affinity seems clearly to be present in many affections that follow given types. The proper knowledge of nerve-chemistry is necessary to reconcile our bedside and consultation experiences with pathologic processes and theories of disease.

Dr. Preston, of Baltimore, laid emphasis upon the defective nutrition of the lower part of the cord, owing to changes in the intercostal arteries, and stated that in early tabes he had found nitro-glycerin of use, possibly by a slight increase of nutrition to the spinal cord, this perhaps also explaining the value of certain local applications.

Dr. Patrick, of Chicago, stated that there could be little difference of opinion in regard to the influence of the various toxic agents on the nervous system ; but, on the other hand, to attribute almost all diseases of the nervous system to an affection that begins in the blood-vessels would be going too far.

Dr. George J. Preston, ot Baltimore, read a paper on

THE EFFECT OF INHALATION OF OXYGEN UPON THE HEMOGLOBIN,

in which he gave the results of a number of experiments upon rabbits, a rat, and a dog. In all of these in which the necessary conditions of the experiment had been fulfilled, the respirations were markedly diminished, in several instances fully one-half, and the hemoglobin was increased in one case as much as 28 per cent., and, as a minimum, 3 per cent. In four men, also, who inhaled oxygen for from five to seven minutes, the hemoglobin was increased on an average about 10 per cent. The conclusion was reached that the inhalation of pure oxygen raises decidedly the percentage of hemoglobin in the blood, probably not by increasing the oxygen in the plasma, but by the fact that all the hemoglobin is satisfied, or, in other words, fewer of the red-corpuscles pass through the pulmonary capillaries without obtaining their complement of oxygen. An examination of the blood of a patient after the use of an anesthetic showed a decrease of hemoglobin from 80 to 68 per cent. Dr. Preston concluded from his observations that a certain proportion of the red-corpuscles were not completely satisfied with oxygen during ordinary respiration.

While the therapeutic field of oxygen has been invaded by empiricists, still this method should have a full and scientific trial in pneumonia, acute bronchitis, pulmonary emphysema, pulmonary tuberculosis, etc. It might also be attended with good results in certain forms of anemia. Its most brilliant future probably lies in its use by rectal injections.

DR. ALBERT E. ROUSSEL read a paper on

LEAD-ENCEPHALOPATHY, WITH THE REPORT OF A CASE.

An artist contracted lead encephalopathy from the habit of passing his brushes, after more or less complete cleansing, through his lips. From a rather large experience in cases of lead-poisoning, Dr. Roussel stated that in a fair proportion of cases many of the symptoms attributed to the direct action of the lead, such as anesthesia and hyperesthesia of local distribution, etc., may be more successfully treated by bromids than by iodids. Recently strong evidence has been adduced to prove that many of the so-called cases of saturnine apoplexy are distinctly hysterical in nature. These facts may explain the relative frequency of cases of lead-poisoning found in recent literature and the lowering of the mortality-records. The treatment should be symptomatic. Sleep should be secured. For the colic and constipation more satisfactory results were obtained from the use of olive-oil in large doses than from magnesia and other drugs.

DR. JOHN ELIOT WOODBRIDGE, of Youngstown, O., read a paper entitled

REPORTS OF TYPHOID—CONTINUED.

He presented a number of letters from physicians who had made use of his treatment with the most favorable results, and also stated that since the publication of his paper in the *Journal of the American Medical Association* he had continued the use of the method with the utmost satisfaction.

Dr. Woodbridge's first prescription consists of calomel, podophyllin, guaiacol carbonate, eucalyptol and menthol. This is given for twenty-four hours. Then the amount of guaiacol carbonate is increased to one-fourth of a grain, and the administration is pushed heroically, notwithstanding excessive diarrhea.

Fever-patients are placed on this treatment, even before typhoid is fully recognized, but in readily diagnosticated cases of typhoid the method has also proved efficacious in aborting the attack, and the temperature is almost normal in ten or twelve days, the distressing symptoms having disappeared.

DR. SYKES, of Ohio, reported three cases of typhoid fever that had responded favorably to treatment similar to that outlined by Dr. Woodbridge, and thought that at the very least Dr. Woodbridge was to be praised for never having lost a case of fever, it being fair to assume that there was the usual proportion of typhoid cases among them.

DR. RODGERS, of Luzerne, Pa., asked whether baths of any sort were used.

DR. WILLIAM E. QUINE, of Chicago, said that he could not speak *pro* or *con*, owing to lack of necessary experience with the treatment. He said, however, that when such broad claims are advanced it is a primary necessity to establish the diagnosis beyond the possibility of doubt; and that it is the duty of the profession to give the treatment a full trial.

DR. WOODBRIDGE, in closing, commented upon the need of the physician being called early enough in these cases, and added that he did not use baths with his treatment, except so far as to insure the cleanliness of the patients. Further, he gave no stimulants.

DR. GEORGE W. WEBSTER, of Chicago, read a paper on

THE DIFFERENTIAL DIAGNOSIS OF CHOLELITHIASIS.

He divided the cases into two classes: those in which there is a stone in the cystic duct or in the gall-bladder, and those in which there is a stone in the common duct. He stated that 10 per cent. of all adult males, 25 per cent. of all adult females, and 36 per cent. of the insane have gall-stones. He strongly advised surgical measures, as operation on the gall-tract is brilliantly successful, and as the solution of the stones is an illusion and removal by medicines is seldom successful. He dwelt upon the necessity for an early, correct diagnosis, and differentiated this disease from lead-colic, malaria, renal colic, peritonitis, and gastralgia.

DR. MUSSER, of Philadelphia, expressed the view that age could not be relied upon as definitely as an element in diagnosis as the text-books would lead us to infer. He stated that gall-stones may form and give rise to symptoms as early as the fifteenth year. He was sure that there are cases of temporary obstruction without the occurrence of much pain. He was inclined to think that a large number of cases designated gastralgia are instances of gall-stones. He touched upon the diagnostic indications for operative measures in cholelithiasis, and stated that he was guided very much by the results of examination of the blood; that the bile destroys the red blood-corpuscles, and after the destruction reduces the number below 3,000,000, it is surprising, even shocking, to notice how rapidly this destruction takes place. In one of his cases, after the red corpuscles fell to 2,500,000, he suddenly found the number reduced to 1,800,000, and the patient went into profound cholemia, or the comatose state accompanying anemia.

In case of gall-stones operation should not be resorted to at once, but the blood should be observed, as well as all the other conditions, and the case held firmly in hand.

Dr. Musser mentioned a case of pneumonia which he was called to see, in which the attending physician felt quite sure that he was treating gall-stones.

DR. TURCK, of Chicago, said that it was important to differentiate between gall-stones of the cystic duct, of the gall-bladder, and of the common bile-duct.

DR. WEBSTER, in closing the discussion, stated that the presence of a stone in the common duct, with gradual and continued emaciation, is an absolute indication for operation; and that the examination of the blood is a better criterion than the clinical evidence of emaciation.

FOURTH DAY—MAY 10TH.

DR. J. H. KELLOGG, of Battle Creek, Mich., read a paper entitled

NEW METHODS OF PRECISION IN THE INVESTIGATION OF FUNCTIONAL DISORDERS OF DIGESTION.

From observations covering 4000 cases he found that the failure to digest starch is one of the most common features in dyspeptics. He commented upon the large amount of sugar found present in the stomach-fluid, 7 or 8 drams per 100 c.cm. of stomach fluid being frequent. He also noted the interesting relation between starch-conversion and proteid digestion. He found six cases of complete apepsia, in which there was no free hydrochloric acid in the stomach, and the coefficient of proteid digestion was absolutely *nil*. He presented the results of a number of tests that he had made as to the influence of various acids on the salivary digestion of starch. He found that it required the following quantities of different acids to neutralize completely the effect of the salivary action: Oxalic acid, 1 part to 10,000; hydrochloric acid, 1 part to 4000; lemon-juice, 1 part to 200; and vinegar, 1 part to 200.

Dr. Webster, of Chicago, said that the object of all therapeutic measures in these cases is to imitate as closely as possible the normal digestive processes, and that Dr. Kellogg's means for exactitude were certainly of great value. He stated that, while not very long ago it was held that salivary digestion is not of much importance, we now know that salivary digestion may continue in the stomach for from thirty to sixty minutes, first in a neutral, and then in an acid medium, due to lactic acid.

Dr. Webster thought that by the use of a very small amount of vegetable acid, or condiment, the total quantity of saliva which is secreted more than compensates for the action of that which is neutralized. He stated that in the physical examination of the stomach auscultatory percussion would enable one to define the lower border of the stomach within a half-inch or less, and that the instrument Dr. Kellogg showed for this purpose was only of possible use in case of exceedingly thick abdominal walls.

Dr. Kellogg, in closing the discussion, stated that there are other vegetable acids more desirable than vinegar, which, while exciting salivary secretion, at the same time inhibits salivary digestion. He advocated the chewing of dry food, as his experiments have shown that this will increase the amount of saliva three or four times, and the patient should eat zwieback, crackers, etc. Besides, all stimulants lose their power after a time, and the quantity must be increased to obtain the same effect.

Dr. I. E. Atkinson, of Baltimore, read a note of a

CASE OF SUPPURATIVE PANCREATITIS, WITH NECROPSY.

The patient was a very stout woman, aged thirty-five years, the mother of two children. Fifteen months before coming under observation she had what her physician thought an attack of hepatic colic lasting two weeks, with almost constant pain. This ceased abruptly, and the patient regained her health, becoming pregnant almost immediately afterward. She made a good convalescence from her childbearing. Shortly thereafter she was seized with a sudden attack similar to that of "hepatic colic." Dr. Atkinson saw the woman sixty-two days after the beginning of this second attack. She was in bed, slightly jaundiced, her body well nourished, her tongue discolored. She vomited several times a day greenish fluid, sometimes slightly bloody, and had marked diarrhea. There was a tumor in the epigastric region, and severe pain in the back between the shoulders. The abdominal muscles were almost motionless during respiration, which was almost purely costal, and significantly rapid when considered in reference to the pulse-rate. There was neither chill nor sweating. There were no symptoms of intestinal obstruction—an interesting fact, as many cases of pancreatic abscess begin thus. The woman was most comfortable in a semi-recumbent, dorsal position.

The case progressed, with the development of graver symptoms, the tumor extending downward to the region of the navel. Fat was never detected in the stools, and examinations of the vomited matter gave no special information. There was complete analgesia. On the morning of the day preceding her death the woman passed a stool consisting of bloody pus, and the tumor became notably smaller. An autopsy showed an opening into the intestine corresponding to about the opening of the pancreatic duct, undoubtedly the source of the pus.

Dr. Atkinson stated that the clinical history of acute pancreatic inflammation had been so definitely put forward by Professor Fitz that a well-pronounced case ought to be readily recognized. Acute pancreatitis has been divided into three classes: Hemorrhagic pancreatitis, gangrenous pancreatitis, and suppurative pancreatitis. The hemorrhagic variety usually terminates within a few days, and naturally is of extreme difficulty of diagnosis; this hinging upon the presence of a tumor, which is to be differentiated from hepatic tumor by the tympanitic resonance over its surface due to the intestines, which are raised up over it. The affection runs its course in a few days, or passes into the gangrenous variety. Suppurative pancreatitis may last as long as a year, and is not, as a rule, characterized by the presence of fatty necrosis. Dr. Atkinson thought this case, strictly speaking, not one of simple suppurative pancreatitis, as the post-mortem examination showed undoubted evidence of hemorrhage, but that it was rather one of hemorrhagic pancreatitis, the inflammation gradually extending to the cavity of the lesser omentum.

Dr. Webster, of Chicago, was curious to know whether there were any post-mortem findings to justify the clinical diagnosis of gall-stones in the early history of the case.

Dr. Stockton, of Buffalo, stated that in his experience with pancreatitis he had failed to find any evidence of fat in the stools. He thought that Dr. Atkinson's case presented rather fewer evidences of shock than usually exist when hemorrhage has taken place, by reason of the peculiar location of the hemorrhage and the pressure on the sympathetic ganglia. Dr. Stockton narrated the case of a young girl, sick for two months with the usual evidences of shock and vomiting, only a slight trace of sugar and a trace of albumin in the urine, who died from prostration. The pancreas was found to be larger than normal, and intensely hard, like the contracted kidney, but there was no evidence of hemorrhage.

Dr. Atkinson added that there were no gall-stones found in his case. He also touched upon the interesting point of the absence of fat from the feces, notwithstanding almost complete destruction of the pancreas or annulment of its active functions.

He stated further that in his own case, as in Dr. Stockton's, there was slight glycosuria, but that he was unprepared to say in what proportion of pancreatic inflammations fat-necrosis comes on, or to account for the conditions of Dr. Stockton's case, though believing that pancreatic inflammation is a good deal more common than is usually supposed.

Dr. F. B. Turck, of Chicago, read a paper on

METHODS OF DIAGNOSIS AND TREATMENT OF THE GASTRO-INTESTINAL TRACT.

He expressed the view that the universal method of percussion may sometimes lead to grave error, and stated that the respiratory movements have the most marked influence on the mechanical movements of the stomach, and in the normal stomach show from 200 to 300 millimeters of pressure. In carcinoma of the stomach lactic-acid micro-organisms are found oftener than in any other trouble of the stomach, an important fact in diagnosis. As to therapeutics, it was held that lavage of the stomach is not especially indicated in dilatation, and that the indications for lavage are limited to a selected sort of dilatation. Massage has been recommended, but this manipulation does not remove the material on the walls of the stomach containing micro-organisms. Dr. Turck follows two rules of treatment: first, the removal of the diseased material containing germs, and, second, disinfection of the mucous membrane as far as possible. For this purpose he has used with success nebulized oil of cloves and oil of cinnamon, so that a cloud of pure essential oil is formed. The advantages of this method are that it is antiseptic, preventing growth of micro-organisms, and also analgesic, the pain ceasing immediately. Oil of cloves is also a vasomotor stimulant and assists in digestion.

To distribute the blood over the body Dr. Turck recommended an ordinary salt-bath at a temperature of 105°, in which the patient lies quiescent. The temperature is sometimes raised as high as 110° or 115°. The patient is then rubbed with a block of ice. In this way the vasomotor system is stimulated, and the metabolism of the body and the action of the heart increased.

In cases in which it is desirable to bring the effect of drugs to bear directly upon the intestines, pills may be coated with betol, which will not dissolve in the stomach, but will do so in the intestines. When there is marked congestion of the colon, ice-water may be introduced by means of a soft rubber tube.

Dr. Turck exhibited, in connection with his paper, a number of instruments successfully used in the treatment and diagnosis of the gastro-intestinal tract.

Dr. Stockton expressed the opinion that lavage is overdone, and should only be practised for merely emptying the stomach in a therapeutic sense. He had found that pills which pass the stomach unchanged are likely to pass the intestines also.

Dr. Turck, in closing the discussion, added that he had found lavage to exert a very unfavorable influence when used indiscriminately, causing loss of weight, owing to the removal of food and of stomach-fluids essential for the welfare of the individual.

The last paper read to the Section was entitled

LEUKOCYTES AND NUCLEIN,

by Dr. T. O. Summers, N. Y., who mentioned three forms of nuclein material.

The following articles were read by title:

THE CONSERVATIVE USE OF LAVAGE IN DISEASES OF THE STOMACH,

by Dr. J. M. Carter, of Waukegan, Ill.

CONSTIPATION AND FAULTY ELIMINATION AS A FACTOR IN DISEASE,

by Dr. Frederick S. Thomas, of Council Bluffs, Iowa.

THE PHYSICIAN,

by Dr. Julius Kohl, of Belleville, Ill.

Section on Obstetrics and Gynecology.

Second Day—May 8th.

Dr. J. M. Baldy, of Philadelphia, read a paper on

HYSTERECTOMY FOR PELVIC SUPPURATION.

He claimed that this method of treatment for diseased appendages was now established on a sure basis. He wished to prove that hysterectomy is not a more dangerous operation than salpingo-oöphrectomy. The uterus is a useless organ after the removal of the tubes and ovaries. It has been demonstrated conclusively that patients suffering from chronic pelvic inflammatory disease are not always cured by removal of the tubes and ovaries alone. Experience only can decide whether hysterectomy, subsequently performed, will cure these patients, but in his own hands and in the hands of other experienced operators this secondary operation has generally been followed by a relief of all the unpleasant symptoms. Recently, in six cases so operated upon, he has had complete cure follow. Does the operation of hysterectomy increase the mortality above that of double salpingo-oöphrectomy? Not only has hysterectomy in his hands lowered the mortality, but it has rendered the convalescence more rapid. He reported 223 cases of hysterectomy, with only 6 deaths, performed by six operators, including 34 cases of his own, without a death, and 70 cases of Kelly's without a death, giving a mortality of but 2.7 per cent.

Dr. L. H. Dunning, of Indianapolis, offered a

NEW METHOD IN THE TREATMENT OF THE STUMP IN OÖPHORO-SALPINGOTOMY

This operation was devised to do away with the *en masse* ligature of the appendages. He claims that there are three serious objections to the method almost universally employed. There is, first, the great difficulty experienced in forming enough of a pedicle, so that retraction with secondary hemorrhage is common. The ligature also, because of this great tension, may cut through the tissues and then give rise to secondary hemorrhage. Secondly, pain is frequently produced by constriction of the nerves by the ligature. Third, adhesions are a frequent sequela, giving rise to pain and obstinate constipation. Three deaths from obstruction of the bowel thus produced have been reported in his local society within the past year. His method is as follows: He proceeds in the usual manner until all adhesions between the diseased appendages and surrounding parts are broken up. The uterus is then lifted up by a special apparatus (a stem with a shoulder), introduced into the vagina, and secured to a Sims' vaginal retractor. A provisional ligature is then thrown around the appendage. The ovary is then separated from the broad ligament and the raw surface closed by a running Lembert suture; the tube is then tunnelled out and ligated and removed, after which the provisional ligature is removed. The same procedure is adopted upon the other side. He has employed this method with success in nine operations.

Dr. Augustin H. Goelet, of New York, read a paper entitled

THE TREATMENT OF INFLAMMATIONS OF THE UTERINE APPENDAGES.

He believes that the extreme limit of abdominal surgery has been attained. Once removed the appendages cannot be replaced, and the gynecologist who saves the most tubes and ovaries within the next ten years will win more renown than he who removes the most. Tubes and ovaries are daily being removed without a previous effort on the part of the operator to improve their condition by a less radical mode of treatment. He is convinced that many cases of inflammatory disease of the tubes are curable without operation. Clinically, the diseases of the appendages may be divided into salpingitis and ovaritis. Usually the cause of salpingitis is evident, but this is not so in the case of ovaritis. Salpingitis may be catarrhal or septic. Ovaritis is acute or chronic, and is frequently a sequence of salpingitis, though occasionally occurring independently. Laceration of the cervix, with infection through the lymphatics, is probably a common cause of chronic ovaritis. Chronic ovaritis may exist as a condition of hyperplasia, atrophy, or cystic degeneration. If salpingitis be found associated with a severe form of endometritis, curettage with packing of the uterine cavity with gauze should first be employed, especial care being taken to remove the granulations from around the orifices of the tubes and at the internal os. Moderate dilatation is all that is required; divulsion is unnecessary. The vagina and vulva are first rendered aseptic, the os is dilated, and the cavity cleaned by a 1 per cent. solution of lysol. Irrigation is then pursued until all oozing ceases. The cervix is fixed by a double tenaculum, and the cavity is then filled with gauze. This tampon must be removed every twenty-four hours, for when once moist it ceases to drain. This free drainage must be maintained and efforts made to remove the exudation from around the uterus. The treatment of ovaritis consists in removal of the cause of irritation. Diseased tubes must be treated or injuries or disease of the cervix attended to. Relief from the symptoms may be secured by treatment directed to the ovary, but this is but temporary.

Dr. Mordecai Price believes that the tendency of the day is too much toward a new method—"my" method. The older surgeons—Tait, Bantock, Keith, etc.—have laid down rules that may safely be followed. He considers ventro-fixation as ever a dangerous operation, giving rise to serious bowel-obstruction. He regards treatment of diseased tubes and ovaries by electricity or other such methods as absolutely futile. The orifice of the tube is obliterated and the organ useless. The removal of healthy tubes and ovaries is criminal, but the palliative treatment of radically changed organs is not much better.

Dr. Dunning, in reply, said that he objects to the *en masse* method of ligature because it destroys the nerve without destroying its integrity, hence the pain.

Dr. Reuben Peterson, of Grand Rapids, Mich., presented a paper on

HYSTERECTOMY FOR PUERPERAL INFECTION,

in which he said that in septic endometritis the putrefactive germs do not predominate, although they may be present; hence, a putrid discharge is not marked. Puerperal sepsis may be divided into two large classes, namely, those in which the general sepsis is predominant, and those in which the sepsis is localized in the uterus or its adnexa. All collections of pus in the adnexa or cellular tissue should be evacuated, preferably by the abdominal route. The treatment must be rigid and thorough, if it will be of any avail. The early removal of the appendages or of the uterus is necessary to avoid general infection of the system. After general infection has occurred hysterectomy is useless. He reported a case in which after curettement had failed, and the disease had become general; hysterectomy was unsuccessfully performed.

Dr. Charles P. Noble, of Philadelphia, followed with a paper entitled

CELIOTOMY FOR PUERPERAL SEPTICEMIA AND FOR PUERPERAL INFLAMMATORY CONDITIONS.

He said that the conditions under which it is desirable to perform hysterectomy for puerperal septicemia are not yet definitely settled. There are two classes of puerperal sepsis, in the *first* of which there exists a diseased condition of the tubes, ovaries, or uterus preceding labor, as tumors, or collections of pus in the tubes existing for months prior to pregnancy. These tumors may be bruised or the pus-collections ruptured during labor, and peritonitis follow. The birth-canal and lymphatics are not involved in these cases, and prompt operation, with removal of the organs, will usually be followed by a cure. Unfortunately, these cases are much rarer than those of the *second* class, in which the tubal disease follows labor, and is due to septic infection of the parturient canal. This is the common form of puerperal fever. The infection spreads, in these cases, to the peritoneum by means of the tubes, or directly through the lymphatics, and gives rise to peritonitis. The lymphatic infection may take place directly through the uterine walls or by way of the broad ligaments. Usually in these cases operation has been too long delayed, and very generally has not been performed until after the seventh day following infection. The lymphatic form of peritonitis is not amenable to treatment by celiotomy; all who are operated upon die. The more radical operation of hysterectomy offers but little chance, because the patient already has profound septicemia or fully developed peritonitis. In the more favorable cases the infection comes through the tubes. If the peritonitis be of a severe form, celiotomy is indicated, as well as in the milder forms, when it is required to prevent a further spread of the septic process. In circumscribed peritonitis the operation is usually followed by excellent results. True pelvic abscess occasionally occurs, and this always requires celiotomy. He prefers hysterectomy when, notwithstanding curettement and the introduction of iodoform gauze, the symptoms grow worse. Large pus-accumulations can better be treated by the vagina than from above, but generally abdominal section will be required.

DR. LAPTHORN SMITH, of Montreal, stated that if every palliative form of treatment, including the curet and drainage, has failed, the only rational thing to do is to remove the uterus, and preferably by the abdominal method, with the use of the *serre-nœud*.

DR. HENRY P. NEWMAN, of Illinois, thinks that curettage is often faultily done, and is in the habit himself of supplementing it by swabbing out the uterine cavity with 95 per cent. carbolic acid and packing with iodoform-gauze. He is also glad to learn that pelvic abscess is not regarded by all as due invariably to gonorrhea. He is sure it can occur from other conditions.

DR. DUNNING, of Indianapolis, wished to place on record his cases of pus in the pelvis, antedating delivery and leading to the development of peritonitis. The first case was one of pyosalpinx, resulting in death three days after delivery, immediately subsequent to operation. Preceding and following the operation there was a discharge of pus from the uterus, due without doubt to suppuration in the uterine walls. The second case was one of pseudo-ovarian abscess, following miscarriage, with the development of septic symptoms. No operation was performed, and post-mortem examination showed that the abscess had ruptured.

DR. CARSON, of Detroit, believed that in cases without local symptoms, in which the patient, although presenting a high temperature, is feeling well, will do better by being left alone. In such cases, in his experience, hysterectomy is fatal.

DR. J. MILTON DUFF, of Pittsburg, believed that if the pulse still keeps rapid, and only a slight decrease in temperature follows curettage and irrigation of the uterine cavity, the patient if let alone will die. Under such circumstances hysterectomy is necessary.

DR. L. S. MCMURTRY, of Louisville, Ky., would regret to have it go out from this Association that after curettage and drainage have failed an operation must be performed. He believed that the majority of the cases recover under an expectant plan of treatment. Operative interference is only to be resorted to on the same principle that the same operation is performed under other circumstances, such as the presence of marked physical signs.

DR. MORDECAI PRICE, of Philadelphia, thought that the use of the curet in any form of puerperal sepsis is exceedingly dangerous. If the curet is avoided and the operation performed instead, the mortality will be lower than when the other plan of treatment is pursued. In these cases he believes that hysterectomy is criminal. The women are already septic, and to create an additional raw surface can only add to their danger.

DR. J. M. BALDY, of Philadelphia, said that the uterine wall is nothing more or less than a large pus-cavity in these cases, and the curet will not cure the condition. If any curet be employed, it must be the sharp instrument; the dull curet is a dangerous instrument in these cases, for it does not accomplish what is wanted. Of what service is it to remove the tubes and ovaries only when the pus is in the uterus? If the patient be left alone, she will probably come again into the hands of the operator for a secondary operation. It would be much wiser to perform the primary operation, and save the patient months of a dangerous condition.

THIRD DAY—MAY 9TH.

DR. A. LAPTHORN SMITH, of Montreal, read a paper on

THE PRESENT STATUS OF TREATMENT OF FIBROIDS OF THE UTERUS BY ELECTRICITY.

He claimed that he occupied a position midway between the electricians and the surgeons. He does not believe that electricity is suitable for every kind of case or every kind of doctor. Electric treatment, when undertaken early and properly applied to suitable cases, is entirely devoid of danger, while operative procedures are not. It is true that electricity is a slow method of treatment; he has spent as many as one-hundred hours on a single case, and yet the ovaries remained, and the mother was a happy woman. This time-question is a serious objection to the method, but not an insurmountable one. A skilled assistant can help in the work, and as many as six treatments in an hour can thus be made. The electric treatment requires a knowledge of the pelvic organs as well as does surgery. Apostoli has pointed out that electricity may be employed as a means of diagnosis in case of diseased appendages. If febrile reaction follows the application of the electricity, Apostoli's dictum is true that diseased appendages may then be regarded as complicating the case. Adhesions do not always follow the use of electricity, and often occur without electricity having been employed.

DR. G. BETTON MASSEY, of Philadelphia, read a short abstract of a paper on

THE TREATMENT OF HEMORRHAGIC CONDITIONS OF THE UTERUS BY ZINC AMALGAM ELECTROLYSIS.

He stated that the use of a soluble electrode should be avoided whenever a pure electric treatment is desired. In certain cases, however, the nascent salt produced by corrosion of an electrode is decidedly beneficial. Copper, zinc, and iron have been employed in this manner. In certain hemorrhagic cases a most beneficial effect follows this method, even after the usual Apostoli method has failed.

DR. W. H. HUMISTON, of Cleveland, Ohio, read a paper on

DISEASES OF A REFLEX NATURE ARISING FROM PATHOLOGIC CONDITIONS OF THE UTERUS AND ITS APPENDAGES.

He said that the origin of reflex troubles associated with uterine disease is mechanical pressure or interference, from the large size of the uterus or tumor. Ovarian pain and dysmenorrhea occur frequently when there exists no marked pathologic condition to account for them. Many gynecologic patients complain of the brain, eyes, nose, abdominal viscera, etc., and a thorough examination of the pelvic organs must be made in all such cases. Anemia, headache, loss of memory, numbness of the extremities, insomnia, epileptic and hystero-epileptic seizures, dyspepsia, an irritable condition of the heart, dyspnea, frequent and painful micturition, inability to walk, are some of these curious reflex manifestations. Usually a pelvic examination shows a retro-displacement or prolapse of the uterus or large and swollen ovaries. The treatment consists in replacement of the displaced organ, curettement, and the proper use of galvanism.

Dr. E. E. Montgomery, of Philadelphia, opened the discussion on the after-effects of ovariotomy or hysterectomy as grouped under the three headings, *mental*, *physical*, and *sexual*. He remarked that pelvic pain, whether extreme or slight, now seems to be an indication for removal of the pelvic organs. An unused function, as is generally known, atrophies; hence after castration the uterus decreases in size. The symptoms of the natural menopause are always aggravated after a premature induction of the climacteric period. Even if the patient has previously had no desire for offspring, the knowledge that now she cannot bear often induces intense longing for children, and if she has had sexual appetite before a deep melancholia may follow. No mutilation should be done when there is a reasonable chance of relieving the condition by other measures. If possible, the organs that are diseased only in part should have the diseased portions exsected and the rest retained. Castration should be practised in nervous cases only as a *dernier ressort*.

Dr. Henry P. Newman, of Illinois, remarked that he has personally never seen insanity or any physical changes follow the operation. Neither has he seen the sexual desire altered to any degree.

Dr. Ward remarked that if healthy organs in young women are removed grave symptoms supervene. If the ovaries are diseased and partially destroyed, however, the changes are not so marked. Sexual desire is not lost. He thinks that in bad cases the uterus also should be removed, to avoid the trying leukorrhea. Very nervous patients improve after operation, and in his experience insanity has not followed.

Dr. Hall, of Cincinnati, said that with one exception he has never seen insanity follow removal of the diseased appendages. This exception was a woman, two of whose sisters had previously died in an insane hospital, and who showed a strong history of hereditary insanity. She died insane some time after the operation had been performed. He does not operate for reflex symptoms. Accumulation of fat usually occurs after the operation, this disappearing, however, at the menopause. He has never seen a growth of hair following celiotomy. Blunting of the sexual appetite he has occasionally noted.

Dr. Massey, of Philadelphia, remarked that his experience was peculiar, because all the cases he sees have been operated on by other men. He has seen some of the worst cases of post-operative sequelæ. In but one case has he seen melancholia follow operation. He has seen alterations of the nervous and moral condition. The sexual feeling is largely limited by operation.

Dr. Howard A. Kelly has encountered six or eight cases of insanity after operation. This complication is most apt to occur when the operation is performed on young girls without gross lesion. There are no changes in the women's general characteristics other than a gain in weight. The sexual appetite is not lost, at least not until after some years have elapsed. In point of fact, in the majority of cases it is restored.

Dr. X. O. Werder, of Pittsburg, read a paper on

VAGINAL FIXATION IN RETRO-DEVIATIONS OF THE UTERUS.

This paper included a report of some cases operated on by Schücking's method and its modifications. In eight cases he has employed buried silkworm-gut, and has had no ill results follow. Mackenrodt's operation differs from this method only in the mode of vaginal incision, which is longitudinal instead of transverse. The dissection is carried up the anterior wall of the uterus until the bladder is fully separated. Failure in this operation is due to the fact that the stitches are inserted too low down in the uterus. He regards the intra-peritoneal method of operating as preferable to the vaginal method, and has performed it in twelve cases. In all cases the operation of vaginal fixation should be preceded by a thorough curettement. If an operation on the cervix is required, it should be done first. Pregnancy has occurred in one of his cases, the patient going to term and being delivered without difficulty. The intra-peritoneal method of vaginal fixation has also been termed vaginal celiotomy. It allows the fundus of the uterus to be drawn down to the vagina, and also permits an examination of the appendages, which may also be easily removed by this method.

Dr. S. L. Jepson, of Wheeling, W. Va., read a paper on

ECTOPIC GESTATION—ITS EARLY DIAGNOSIS AND TREATMENT.

He said that the principal diagnostic points were the signs of pregnancy, menstrual suppression, pain of a colicky nature, irregular bloody discharges, the expulsion of shreds of decidua, and a cyst-like tumor to one side of or behind the uterus, progressively enlarging in size. He would exclude all methods of treatment save celiotomy and electricity. Experience has shown that electricity will not kill the fetus. Suppuration within three months after the use of electricity has never been reported. Electricity can be used when other operations cannot be performed. Again, many women will submit to electric treatment who will not consent to other operations. Electricity should only be employed during the first three months of gestation, and when the tube is intact. He admits that electricity is not the ideal treatment, but claims that it should be given a fair trial. In unruptured tubal pregnancy celiotomy, with removal of the appendages, is the ideal method of treatment.

Dr. Augustin H. Goelet, of New York, doubts the expediency of abdominal surgical operation in every case of unruptured tubal pregnancy. In early rupture, with slight hemorrhage into the broad ligament, he would not operate at once, but would wait, and only operate when signs of danger are indicated. If the hemorrhage occurs into the abdominal cavity, he advises not to operate until the danger of secondary hemorrhage has passed away and the hemorrhagic effusion has become shut off from the peritoneal cavity by means of the adhesions which have formed. He would then open the sac from the vagina.

Dr. Hall, of Cincinnati, said that it is difficult to say whether rupture has taken place into the broad ligament or into the abdominal cavity. He has operated on sixteen cases, each of which had been diagnosticated and treated for rupture into the broad ligament, the operation proving, however, that all had been free ruptures into the peritoneal cavity. Price, in more than one-hundred operations, has yet to see a rupture into the broad ligament. He believes in operating as soon as rupture occurs.

Dr. Reed believes in operating at once, whether the operator be experienced or not. He believes that many lives may thus be saved.

Dr. Gilliam, of Columbus, Ohio, does not regard the operation for celiotomy as an easy one. Some cases are easy, but others are not. In very few cases of ruptured ectopic pregnancy do the patients die in the first hemorrhage. Some patients have as many as six bleedings.

Dr. Howard A. Kelly, of Baltimore, Md., read a paper on

SUSPENSIO UTERI: THE PROPER METHOD OF PERFORMING IT, AND ITS RESULTS.

Dr. Kelly refused to accept the name of ventrofixation or hysteropexy. The uterus is not fixed. He prefers the name of suspensio uteri as more accurately describing the condition. In the past five years he has performed this operation 170 times and 37 times in the past year. The indications for the operation are extreme local discomfort associated with uterine displacements, and neurasthenia, with backache and headache. In the first class of cases, with local symptoms but no general symptoms, the operation is plain. In the last series of cases it is difficult to say just when the operation is indicated. The most brilliant cures, however, have been in this class of cases. He is willing to take the chances and fail in four cases in order to get one good cure. Of the 132 cases reported, 90 were married; and of these, 78 per cent. had borne children, and 14 of them had had miscarriages. Not one died or showed bad symptoms. Transient mania had occurred in 3 cases, pneumonia in 1 case, and stitch-abscess in 3 cases. Cystitis and frequent urination had occurred in 4 cases only, and had been but transient.

The operation is simple. The pelvis should be slightly elevated, and a small incision made just above the symphysis pubis about one-and-one-half or two inches in length. The perineum is incised and drawn out with forceps. Two fingers are inserted to the fundus, and the uterus hooked up. Adhesions are stripped off with the fingers or cut with scissors or knife, and the uterus anteflexed. The abdominal wall is lifted on the left side until the peritoneum can be seen for one inch away from the line of the incision. A needle is then carried through the peritoneum, but not entering the muscular tissue, and then through the posterior uterine wall just below the fundus, taking in about one-fourth of an inch in length, and extending about one-eighth of an inch in depth. The suture is then carried to the opposite side of the abdominal wall. Another stitch is passed just above the first, near the incision, and inserted into the uterus below the other, and then carried back to the opposite side of the abdominal wall. This increases the anteflexion. A third suture may be inserted. The peritoneum is then closed by a continuous suture; then the fascia is closed and then the skin-incision. The distance between the uterus and anterior abdominal wall is about one or one-and-one-half inches. The organ is attached by a strong fibrous cord which contains the sutures close to the abdominal wall. Pregnancy is not seriously interfered with. In only one case, and that after two years, did the uterus drop back.

Dr. H. R. Holmes, of Portland, Oregon, reported

TWO INTERESTING CASES OF PELVIC SURGERY,

intended to throw some light on ventrofixation.

Dr. A. Lapthorn Smith stated that he is in the habit of using permanent silk ligatures. He formerly used catgut, but had had bad results. He passes the stitches through the peritoneum and fascia also. The uterus is movable, but by the cervical end rather than by the fundus.

Dr. Peterson, of Grand Rapids, suspends the uterus by the ovarian ligament, as originally done by Dr. Kelly. He has performed seventeen such operations. He would like to know whether the ovaries are lifted up by this last method or by the original method.

Dr. Pyle, of Cleveland, Ohio, reported a case of death resulting from hemorrhage from one of the stitches passed through the fundus.

Dr. Werder said that the advantage of vaginal fixation over suspensio uteri was the early getting up; the patient was only confined to bed ten days. He also avoided stitch-abscesses.

Dr. Bedford Brown, of Alexandria, Va., read a paper on

THE THERAPEUTIC ACTION OF CHLOROFORM IN PARTURITION.

In all literature, he said, there are reported not more than forty cases of death from chloroform during labor. He has used the anesthetic, given every half-hour for from twenty to forty hours, without any trouble following He has seen a profound chloroform-operation in obstetrics lasting for three or four hours without grave effects. He objects, however, to the careless use of the anesthetic. The alteration in the vasomotor system of a pregnant woman enables her to resist the toxic action of chloroform to this wonderful extent. Is the use of chloroform in labor for the relief of pain alone justifiable? He believes it is not only justifiable, but that it would be inhuman to withhold it. He believes that it is the anesthetic of all others peculiarly adapted to parturition. At what stages of parturition is chloroform applicable? For pain in any stage in small quantities. To remove muscular rigidity of the cervix or perineum a larger quantity is required, until there follows complete muscular relaxation. Does chloroform tend to prevent uterine contractions? If given in sufficient quantity, it will do this. Does its use tend to promote hemorrhage? He has never seen a greater tendency to hemorrhage after than without its use. In 2000 cases of labor which he has attended he has given chloroform in 1500 without ill effects following.

Dr. J. J. E. Maher, of New York, presented some

ORIGINAL STUDIES ON THE OBSTETRIC FORCEPS, WITH MECHANICAL DEMONSTRATIONS.

He said that the circle of Carus does not give the center of the inferior strait, although giving that of the superior strait. His studies were directed to the devising of some circle which would more closely approximate the curve of the pelvic canal than that now in use, the teachings of the Edinburgh School of Obstetrics.

Dr. Todd Gilliam, of Columbus, Ohio, in a paper on

THE VAGINAL ROUTE FOR OPERATIONS ON THE PELVIC VISCERA,

presented a vaginal retractor, showing considerable ingenuity in its construction. It was held in position by the patient's body as she lay in the dorso-sacral position, and could be tightened or loosened by means of a screw on the handle.

Dr. W. A. B. Sellman, of Baltimore, Md., presented an instrument or reamer, devised for dilating the constrictions of the uterine canal occasionally encountered. The instrument acts on the same principle as a pencil-sharpener, paring away the tissues in slices. It may be used with or without anesthesia. If a large amount of tissue be removed, the patient should be kept in bed for from four to seven days. The instrument is not intended to take the place of the curet in the treatment of fungoid growths.

Section on Neurology and Medical Jurisprudence.

Third Day—May 9th.

Dr. Eugene S. Talbot, of Chicago, Ill., read a paper on

THE DEGENERATE EAR.

He presented a review of the literature of the subject, and added a series of observations of his own, including the measurements, size, and position of the ear, etc., made upon large numbers of persons of different classes of society. As a result of his studies, the conclusion was reached that the external ear shows a tendency to disappear, which is evidenced by its feeble muscles.

Dr. Langdon, of Cincinnati, made some interesting comments upon the subject, in which he confirmed the statements made by Dr. Talbot, that there was considerable variation in the size and location of the external bony auditory meatus, so much, indeed, that it was an unsafe landmark in cranio-cerebral topography.

Dr. James K. King, of Watkins, N. Y., reported some unusual cases of

REFLEX NEUROSES.

He called attention to reports of cases of serious organic disease of the nervous system which were said to have been cured by this or that treatment. In many instances he thinks there was an error in diagnosis. There is no organic disease of the nervous system, as has been so often said, that may not be due to a functional cause. The case of a lady was referred to who had been seen by several physicians, and all united in agreeing that her symptoms were due to hysteria, but on post-mortem examination she was found to have been suffering from tuberculous meningitis. The case was due, therefore, to reflex nervous disturbances. Reflex headaches arise from a great variety of functional disturbances. Abnormalities of the stomach, liver, bowels, eyes, uterus, ovaries, etc., each causes headache in certain cases. Chorea is often a reflex neurosis. Reflex cardiac disturbances may simulate closely grave organic trouble.

In the discussion, Dr. Diller expressed it as his belief that while there are many reflex neuroses the local affections are simply the expressions of a constitutional trouble, correction of which would be followed by a spontaneous disappearance of the local lesion.

Dr. Kellogg agreed with Dr. Diller. He called attention to the fact that the two sides of the body are never symmetrical, but no difference in loss of balance is observed in health. As soon, however, as the general tone becomes lowered, then the weak ocular muscle or other member gives way, and the mistake is often then made of attributing to this local manifestation the impairment of the general health. In many cases the cure of the man will be followed by disappearance of the local troule.

Dr. Thomas J. Mays, of Philadelphia, read a paper entitled

THE NEUROTIC ELEMENT IN PULMONARY CONSUMPTION.

He concluded that any agent or influence that has the power of disordering or interfering with the integrity of the respiratory nerves in particular, or with the nervous system in general, also has the power of producing "pulmonary consumption" and other forms of lung-disease. In a recent canvass of the literature of this subject, he found the records of over a hundred cases of "phthisis" in which the pneumogastric nerves, or the respiratory centers, were compressed or injured or diseased in connection with syphilis, alcoholism, diphtheria, measles, diabetes, multiple neuritis, locomotor ataxia, bulbar paralysis, tumor of the pons and medulla oblongata, etc.

The weakness, the easy fatigue, the restless sleep, the extreme nervousness present in many cases, the dyspnea, the hoarseness and aphonia, the thoracic pain, etc., were held to indicate that the principal nature of "phthisis" is one of nervous exhaustion? Finally, it was maintained that therapeutically the best results were obtained from those measures and agents that prove the most efficient in the treatment of nervous diseases, rest, nutritious food, strychnin, electricity, hypophosphites, cod-liver oil, phenacetin, capsicum, quinin, and other remedies that appeal to and influence the nervous system.

Dr. L. D. Mason, of Brooklyn, N. Y., read a paper on

ALCOHOLIC COMA COMING UNDER POLICE CARE.

Dr. H. M. Lash, of Indianapolis, Ind., described a case of

RIGHT HEMIPLEGIA AND APHASIA.

Dr. E. D. Ferguson, of Troy, N. Y., read a paper on

THE TREATMENT OF EPILEPSY BEFORE THE HABIT IS FIXED.

He referred to some common causes of irritation that are responsible for starting epileptic seizures, and of the well-known difficulty of curing epilepsy when once the habit has been established. On the other hand, by removing the cause early the fits will cease permanently. Among other cases reported were two in which an adherent and contracted prepuce seemed to be the cause of the trouble. Both were subjected to circumcision; the one operated upon before the epileptic habit had become established was permanently cured. In the other case the fits had lasted several years, and, although improvement was noted after the operation, a cure was not effected.

DR. WALTER B. JOHNSON, of Paterson, N. J., reported a case of

EPILEPSY CURED BY TENOTOMY OF THE OCULAR MUSCLES.

The case was that of a man, aged twenty-three years, who had suffered for two years with epileptiform attacks. He had been subjected to varied treatment, including that of the eyes, and glasses were prescribed, but the attacks, which were held in abeyance for a time, returned. Finally, as 5° of esophoria existed, the internal recti muscles were partially divided. Examination immediately afterward showed a slight exophoria. The patient has been well from the time of the operation, and the seizures have not recurred.

The subject of epilepsy being open for discussion, DR. PATRICK spoke favorably of treating the disease by ascending doses of opium until fifteen grains daily are administered, when it is to be suddenly withdrawn and the bromids substituted.

DR. HERDMAN objected to the systematic administration of the bromids in epilepsy, owing to the fact that in its incipiency the disease is so frequently dependent upon some local lesion. The use of the bromin salts depresses the nervous system, and probably keeps the attacks largely in abeyance, while the local irritation continues and the habit becomes established. If the fits are not stopped by drugs, a more careful search should be made for an exciting cause.

DR. C. S. CAVERLY described briefly

AN EPIDEMIC OF ACUTE ANTERIOR POLIOMYELITIS.

The cases included in the report had been under the care of a number of physicians, and different diagnoses had been made in the different cases. It is evident, however, by a study of the group, that they were all related. The patients presented the usual symptoms of acute anterior poliomyelitis, and in addition horses, dogs, and fowls in the vicinity of the epidemic died from the disease, as was shown by post-mortem examination.

DR. THEODORE D. DILLER, of Pittsburg, read a paper on

SOME ATYPICAL FORMS OF TABES.

A number of cases were described in which one or more of the usual symptoms were wanting. A careful study of each case, however, revealed the true nature of the disease.

CORRESPONDENCE.

LONDON LETTER.

The New President of the College of Surgeons—The Influenza—Medical Men as Political Administrators—The Reports of the Tuberculosis, Opium, and Vaccination Commissions—Death of Mr. Towers Smith.

MR. CHRISTOPHER HEATH, who has just been elected President of the College of Surgeons, in succession to the late Mr. J. W. Hulke, is Holme Professor of Clinical Surgery in University College, and has held a leading position in London as an operator for some twenty-five years. He is the grandson of a naval surgeon who served in Lord Howe's flagship at the end of the last century, and he himself began his career as a volunteer surgeon in the British Fleet in the Baltic during the Crimean War. He is a man of fine presence, a ready speaker, and an excellent surgeon of the prescientific race before bacteria and streptococci had begun to trouble the minds of operators. Mr. Heath learnt his profession at King's College under Sir William Fergusson, and, like all the pupils of that great surgical artist, he rather conveys the impression that he thinks all surgery lies in the knife. "Old Fergie" could hardly be got to look at a case after it had left the operating-table. Mr. Heath is far from being a mere operator, but he is distinctly a "practical" man, whose interest in the structure of a tumor, for instance, is strictly limited to the question whether it is likely to recur. His teaching is addressed to the mass rather than to the elect, and he has been remarkably successful as an academic sheep-dog in driving his straggling flock to the examination-table. When he speaks to a wider circle his somewhat aggressive manner of expressing his views sometimes brings him into collision with his professional brethren. A few years ago in a lecture before the College of Surgeons he fell foul of the rhinologists, whose territory lies uncomfortably close to that covered by his best-known book, *Diseases of the Jaws*. Again, only the other day he made a vigorous onslaught on some orthopedists for what he implied was a not altogether disinterested devotion to screws and ratchets in the treatment of spinal curvature. Still "Christopher" is a man of whom we are all ready to declare (post-prandially) that "he's a jolly good fellow," and no doubt he will make a capital President. The appointment is only for the remainder of the term which Mr. Hulke left unfinished, and a fresh election will take place in July, but Mr. Heath will in all probability be re-elected. The only opposition candidate at all likely to be run against him is the one he has just beaten, viz., Sir William MacCormac, of St. Thomas's Hospital. Sir William's earlier career may be described as the travels of an Irish gentleman in search of decorations. Though not a military surgeon, he has sought the bubble reputation on many battlefields at a noncombatant distance from the cannon's mouth, and he has thrilled the breasts of peaceable citizens at home by appearing on a public platform in the full war-paint of a general officer of the Servian or Bulgarian army. The broad chest with which Nature has endowed him scarcely affords sufficient space for the display of the various orders—mostly of the third and fourth class—which foreign governments have lavished upon him. Sir William MacCormac was knighted in recognition of his distinguished services in connection with the International Medical Congress of London (1881), and he has found time in the intervals between his campaigns to make several contributions to surgical literature.

The influenza has almost spent itself, but the medical eye can everywhere trace its effects—not least among the politicians. They show themselves in the leaders in the form of faults of temper, deficiencies of tact, and downright opacity of intellectual vision, which would be surprising did we not know too well by this time the mischief which that subtle poison works in nerve-centers. It is influenza that is mainly responsible for the complications which are threatening to split up the

Unionist party into its component elements. The bad ventilation of the House of Commons is probably to a large extent responsible for the ease with which our elected legislators become the spoil of any stray bacilli that may be going about seeking whom they may devour. Some of the members, however, find compensation for the chemical impurity of the atmosphere in its soporific virtues. Henry Labouchere says the House of Commons is the only place where he can really repose in the arms of Morpheus. Were it not that the British Constitution would be shaken to its base if a peer were to sit in the Lower House, poor Lord Rosebery might have found in the air of the Commons that sweet sleep which neither the air of his beloved Epsom nor the sulphonal and other "drowsy syrups" prescribed by Sir William Broadbent could bring to his weary brain. The medical profession, at least in London, has suffered in health more severely in this epidemic than in any of the previous visitations; but as a body it must have benefited considerably in pocket. The want of such a stimulus to business was beginning to make itself somewhat acutely felt. It is said that at a dinner-party where most of the chief priests of the metropolitan temple of medicine were gathered round the hospitable board of a leader in laryngologic Israel, the most doleful confidences were exchanged; times were so bad that the chink of guineas had almost ceased to be heard in the consulting-rooms. Whether or not a libation to the divinities of plague and pestilence was poured on that occasion has not been revealed, but it is a fact that very soon afterward the influenza fiend descended upon us, and the stream of practice, which had almost run dry, once more became a brimming Pactolus.

The fighting in which British troops have just been engaged on the northwestern frontier of our Indian Empire has not probably attracted much attention in America, but here it has been followed with greater interest than our "little wars" usually excite. The leading part in it has been played by a member of the medical profession. Dr. Robertson, the British political agent at Chitral and the explorer of Kaffiriston, is a surgeon-major in the army, and a man of quite remarkable ability as an administrator and a diplomatist. There would seem to be something in a medical training that particularly fits men for the task of ruling native races and administering new countries. Leander Starr Jameson, the right hand of Cecil Rhodes in South Africa, is a doctor of medicine of London University, and was a prosperous physician at Kimberley before he became administrator of Mashonaland and an organizer of victory in Matabeleland. Sir William McGregor, the administrator of British New Guinea, is a Doctor of Medicine of the University of Aberdeen. Livingstone's friend, Sir John Kirk, whom Lord Kimberley, the Secretary of State for the Colonies, is sending as Special High Commissioner to the Niger to inquire into recent disturbances in that region, and formerly British Consul-General at Zanzibar, is a Doctor of Medicine of the University of Glasgow. Sir Rutherford Alcock, one of the oldest Fellows of the Royal College of Surgeons of England, was for many years British Minister at Pekin.

The Royal Commission on Tuberculosis has taken an unconscionable time to issue its report, and now that the long-expected document has been given to the world it is found to contain little that is new. The practical recommendations of the commissioners may be summed up in the maxims: Don't eat tuberculous meat, and boil milk before drinking it. The advice is unquestionably sound, but it hardly needed a Royal Commission to teach us these elementary hygienic truths.

The report of the Opium-commission is a much more satisfactory document. The evidence collected in various parts of India shows conclusively that the prevalence of the opium-habit in India and its alleged evil effects on the bodies and souls of the natives have been grossly exaggerated. The Hindoo takes his opium as the European takes his tea or coffee, and gets no harm therefrom unless he exceeds his proper allowance, which it appears he very seldom does. Medical men who know India and China and their inhabitants are practically agreed that if they are deprived of opium they will take to alcohol instead, and their last state will be far worse than their first. Another consideration which has made politicians welcome the report of this commission with greater enthusiasm than they are wont to manifest for the results of scientific investigation, is that the opium-traffic is a most important source of revenue to the Indian Government, which in the present critical state of its finances it cannot afford to lose. It is therefore comforting to John Bull to be spared a painful conflict between his conscience and his pocket.

Another royal commission—on vaccination—has been sitting four or five years, and appears likely to continue sitting till it falls to pieces by the natural process of decay. At irregular intervals it shows a flicker of life, the commissioners meeting, but only to adjourn for a further indefinite period. It is to be hoped that this prolonged labor will be followed by a satisfactory delivery. In the meantime the vaccination-act has become practically a dead-letter in many parts of the country, and everywhere it is becoming more and more difficult to enforce the law in the face of the obstinate silence of the oracle for whose utterance all are waiting.

The new Speaker of the House of Commons, Mr. Gully, is the son of the late Dr. James Manby Gully, of Great Malvern, the great prophet of the "water-cure" in this country. Of the eight Speakers elected within the last hundred years two have been sons of physicians, the other one having been Mr. Addington, who, greatly to the detriment of his reputation, gave up the position of First Commoner to become a Viscount and the feeble head of a very short-lived administration.

Mr. Towers Smith, who recently fell a victim to pneumonia following influenza, had in recent years made for himself a lucrative practice by easing rich people of the load of "too too solid flesh," with which overeating, want of exercise, and imperfect elimination had burdened them. Among his patients was the Prince of Wales, whose not altogether fairy form he succeeded in lightening by some thirty pounds. Needless to say the fact that he had had royalty under his treatment brought Towers Smith troops of patients. Everyone whose waistband was beginning to be a little tight hurried to him, as Louis XIV's courtiers insisted on being operated upon by the hands that had touched the sacred person of the Lord's anointed. Towers Smith was fast converting the adipose tissue of London "society" into solid cash, and he might have made a fortune had he lived a little longer. His method was based on the Saulsbury system.

FRAILTY MAKES US KIN.

To the Editor of THE MEDICAL NEWS,

SIR: I desire to call attention to a method by which reputable medical journals, unless watchful as well as honest, can be made the medium for the advancement of the personal ends of designing men. I wish also to note that even a journal that may occasionally smile at the weaknesses of medical men may itself be not without a moment of relaxation in its vigils in which it can be successfully assailed. Even toward these mighty censors of the medical world, in whom frailty reveals the touch of a common humanity, we of the rank and file need at times to extend a charitable hand. The two instances I am about to refer to will present the method with sufficient clearness without further introduction.

In the columns of a prominent New York medical weekly have appeared at intervals three articles, two of which are quite lengthy, from the pen of a metropolitan contributor, upon the hypodermic use of a combination of two mineral salts in the treatment of tuberculosis. With an apparent show of frankness, the writer names in the first paper the active ingredients in the solution he uses. In the second paper he adds to this the dose of the liquid, but does not state the strength of the solution of the salts named. He calls attention to a precipitate which results if the "solution" is not compounded with "special skill," but fails to intimate how it can be avoided, and, with an apparent climax of generosity toward the helpless physician and bewildered pharmacist, he gives the names and addresses of two drug-firms by whom the "liquid" is "prepared in accordance with my directions." In the third article referred to, he states the dose of the "fluid," and gives its approximate strength in the "combined salts," but omits to state the relative proportion of either of the two active ingredients in the combination.

By a study of either of these articles, or a careful comparison of all three, it is impossible for a skilled pharmacist to reproduce the author's "solution." But there is such an openness in his literary style, surely he can intend to conceal nothing. Without doubt, a personal letter to the doctor will clear up all discrepancies. But what is the result? A repetition of statement of the difficulty in the preparation of the "liquid," but no word as to its avoidance, and the name of a druggist from whom the medicine can be procured already prepared at a price that allows of a generous profit.

As a result of the method followed by this physician, and advanced—unintentionally I believe—by the medical journal, the medical man who desires to try the treatment with these drugs in combination must experience the difficulties of experimentation, both therapeutic and chemic, or is forced to purchase the medicine from one of the firms named, and be content to use a preparation of which he cannot know the exact composition.

We have heard of no explanation of this secrecy of method, and it can at least be said of the physician that in a medical sense he has not avoided the appearance of evil, and has suggested to the financially embarrassed doctor an easy way of profit, if only the medical press, especially those of its representatives with the widest circulation and best standing, will generously continue to extend to our impecunious brethren the freedom of their pages.

Here is another case in point. In the same journal there appeared in the summer of 1894 an article by a physician in a rural district of the same State, claiming remarkably good results from the hypodermic use of a solution of a coal-tar product in the treatment of tuberculosis. "I use it in the strength of grs. v to ℥j," he writes, but he avoids stating how much of this solution he uses at a dose, or how often the injections are repeated. It appearing that a solution of the strength named would be objectionable for hypodermic use, I wrote him for further particulars. His reply comes with all the delight of rural freshness, and is worthy of being placed by the side of our medical classics. After stating that his later successes were even greater than his first victories, he says:

"I am at present appointing physicians through the country to use the remedies, only asking them $250 and a Bond of $10,000, I furnishing the medicine at $5 per ℥ij, and consulting with them. I do this to protect myself and colleagues from some of my unscrupulous brothers and to hold it in my own name. If you had the same you would do likewise. Any other information will be gladly given, but I cannot tell family secrets."

After quoting this personal reference, I owe it to myself to state that I have not the honor of acquaintance with this medical sage.

Respectfully yours,
R. T. STRATTON.

911 MARKET STREET, OAKLAND, CAL.

THE TREATMENT OF WHOOPING-COUGH.

To the Editor of THE MEDICAL NEWS,

SIR: In these days when heaven and earth and the waters under the earth are being ransacked for new remedies, when the Greek roots and the Greek words coined would make the "Seven Sages" writhe in their graves, it occurs to me that the "crying want" is not so much new remedies as the knowledge of *how* and *when* to use those that we have. As an example, allow me to give my experience with chloral hydrate in a recent epidemic of whooping-cough. There were in all ninety-five cases, and of the patients two died, both being very young infants. Perhaps those might have been saved had the treatment been faithfully carried out. In previous epidemics I had tried chloral in small doses, as well as almost everything else, but nothing was satisfactory. I used to dread the disease, but I do not do so now. I got but little good from the doses usually recommended in the text-books. The drug must be given often enough to render the paroxysm so mild as to be harmless. A child one year old will probably require ten or fifteen grains in twenty-four hours, and it may be *more.* I give the agent in syrup of glycyrrhiza every hour or so, and tell the mother to "*give enough to do some good;* to begin with a moderate dose and gradually increase it until the dose is reached that is necessary to keep the disease in check." Given in this way children take the drug readily. If the child sleeps too much, the dose can be diminished, but this rarely happens. It was surprising how much young babies would take without an undue soporific effect. The disease seemed to counteract that effect largely. If the mothers would only give enough, the paroxysms would surely be controlled, generally within twenty-four hours. Until then I would order a teaspoonful of ether poured on a cloth, and let the child inhale it, or would give a drop of amyl nitrite occasionally, used by inhalation; both are effectual. I gave the chloral to children of all ages, from those of a few days old to those of fifteen years, and never saw it do any harm. *À priori*, one would think chloral would be the remedy *par excellence*, and I believe it is. It is our best antispasmodic, relieves bronchial irritation, promotes secretion, and does not derange other secretions as opium and belladonna do. If the bronchitis was severe, I kept a jacket poultice around the chest, over this oiled muslin, and then thick flannel over all. There should be enough mustard mixed with the flaxseed meal to keep up a *continuous redness*. I mix dry in about the proportion of twelve or fifteen to one. If mixed dry, there are no small lumps of mustard to burn. This can be kept in place two or three days, and when removed is always warm and usually still sweet. Effervescing ammonium citrate, I think, is generally better than the carbonate, as it is pleasant, agrees better, and can be given much more freely. It also keeps the urine alkaline. I use about equal parts of each. A solution of citric acid is placed in one bottle and the carbonate in another, and both are mixed in a little water when given. Of course, all abdominal irritation must be removed on account of its reflex influence. All these cases were watched closely.

Respectfully yours,
H. M. HASKELL.

PALMER, MICH.

THE UNIVERSITY OF MARYLAND AND THE FOUR-YEARS' COURSE.

To the Editor of THE MEDICAL NEWS,

SIR: I am sure THE MEDICAL NEWS did not intend to do an injustice in its Editorial Comments (April 27, 1895), but it has certainly done so. In the first place, there is no "opposition to a four-years' course," as the note is headed, but a "doubt as to the advisability of adopting a four-years' course at this time." "The arguments which may be found or devised to support this contention" may be heard when the association meets to discuss the matter. The table presented in THE NEWS shows the University of Maryland to have had better results than the College of Physicians and Surgeons, New York; Bellevue, N. Y.; the Woman's College of Philadelphia, the Medico-Chirurgical College of Philadelphia, all the other Baltimore colleges, except the Woman's, all the Kentucky schools, all the Georgia schools, the Charleston Medical College, all the North Carolina schools, University of Tennessee, Vanderbilt University, Tennessee Medical College, Howard University, Washington; Pulte Medical College, Cincinnati; St. Louis Medical College, and the University of Vermont, and yet, to use your own words, "It seems strange that from those schools whose graduates fare the worst in competitive examinations should come opposition to the elevation of the standard of medical education." So important and highly respected a journal as THE NEWS should be a little more careful in its groupings as well as in its inferences. Moreover, the University of Maryland long ago recognized the fact that the old two-year course was not sufficient, either in quantity or quality, as the education of a physician, and adopted the three-years' course, with preliminary examination, before the Association of American Medical Colleges came into existence, thereby losing scores of students who wished to graduate in two years, and a corresponding amount of fees. We think this pioneer effort on the part of an unendowed school is not altogether without merit. Now, as to rejections before the North Carolina and other State boards, if THE NEWS had taken the trouble to get statistics of the last four years, and had contrasted these with the results of earlier years, it would have found a different showing. I wish to say most emphatically that the University of Maryland, Faculty of Physic, is *not* opposed to a four-years' course, but is simply not *yet* prepared to adopt it. I am yours, very truly,

J. EDWIN MICHAEL,
Dean of the Faculty of Physic.

EVACUATION OF THE TYMPANUM.

To the Editor of THE MEDICAL NEWS,

SIR: The note by Mr. Donald B. Fraser in THE MEDICAL NEWS, on "Evacuation of the Tympanum" (No. 1163, p. 455), contains an excellent suggestion, which is likely to be abused, however, if others follow his commended procedure as diligently as he would seem to do, and ignore at the same time very important physiologic facts, as seems now the fashion. He seems unaware of the "Toynbee experiment," which gives a far better reversal of the Valsalva experiment than does the procedure advocated by him. Toynbee pointed out in a paper read before the Medico-Chirurgical Society of London in 1853 that deglutition with the mouth and nose closed caused a feeling of pressure in the ear, which was at first erroneously ascribed to the penetration of air into the tympanum (*Diseases of the Ear*, p. 196), but has ever since been recognized as being really an exhaustion of the air from the drum-cavity and Eustachian tube. Hardly a German text-book fails to give this method in its relation to the Valsalva experiment; but it is to be regretted that it is so rarely noticed in the English and American treatises.

The practical value of such evacuation of the tympanum will prove slight and rare in cases of exudation into the cavity, and patients and physicians should be cautious in its employment or advocacy. The disadvantageous results of its frequent unintentional performance were pointed out by Lucae, and are urged in a brief paper of mine about to appear in the *Philadelphia Polyclinic*. When occasion arises to test the methods of emptying the drum-cavity through the tube it will generally be found that the act of swallowing will better accomplish the exhaustion than the inspiration commended by Mr. Fraser, as anyone can in a moment prove for himself. Yours, very sincerely,

B. ALEX. RANDALL.

1806 CHESTNUT STREET, PHILADELPHIA.

A CASE OF PREGNANCY WITH TYPHOID FEVER.

To the Editor of THE MEDICAL NEWS,

SIR: The case of pregnancy with typhoid fever, reported by Ashburn in THE MEDICAL NEWS of January 26th, reminds me of a case that occurred during my service at the General Hospital in 1891.

The patient, aged thirty years, with her little daughter, two years old, entered the hospital with the history that both had been ill for some days. Both presented typical pictures of enteric fever; the child was separated from its parent, treated with tepid baths, and the disease soon proved to be abortive typhoid. The mother, on the other hand, presented a high grade of fever, with all other symptoms peculiar to a grave form of the disease. She was treated by the Brand method, several baths daily being required to subdue the pyrexia. On the second or third day after the baths had been given, I was informed by the attending nurse that the patient had not menstruated for nearly three months. By questioning and examination I elicited the fact that the woman was pregnant, of about three months' duration. At the advice of Dr. Stockton the plan of treatment already instituted was not interfered with, the condition of pregnancy being practically ignored. After a few days cool sponge-baths supplanted the tub-baths. The outcome was that the patient fully recovered after a moderately severe type of the disease, with no unpleasant sequelæ, and the pregnancy was carried to full term.

Respectfully yours, G. A. HIMMELSBACH.

137 W. TUPPER STREET, BUFFALO, N. Y.

EVACUATION OF THE TYMPANUM.

To the Editor of THE MEDICAL NEWS,

SIR: In my article on "Evacuation of Tympanum," which appeared in THE MEDICAL NEWS, I stated that the Politzer air-bag could be used to evacuate the tympanic cavity by reversing its action as employed in inflation of the Eustachian tubes and middle-ear cavity. I should have advised instead the use of a bulb-syringe, with a suitable nozzle, as this was what I myself used in my first experiments. Besides, the Politzer and all other air-bags have valves which prevent the reverse action. All that is necessary is a bulb-syringe, made of good rubber, having a suitable nozzle, and no valves. I use it as follows, viz.: I compress the bulb by squeezing it lightly, introduce the nozzle into one nostril, press the other tightly against it, direct the patient to keep his mouth closed, release the bulb and allow its expansion to exhaust the tubes and ear-cavity, and then press the bulb slightly and get the patient at the same time to blow against the lips until the cheeks are fully inflated—"blown out." I keep up this action, and thus inflate and evacuate alternately, so that the two processes are effected by one instrument. The patient's mouth must remain closed all the time. There must be no valves in the bulb-syringe, and it must possess considerable elastic recoil.

I have used this treatment in many cases with good effect, and hope soon to report some of them.

I am yours truly, DONALD B. FRASER.

LONDON, ONT.

VERATRUM VIRIDE FOR PUERPERAL ECLAMPSIA.

To the Editor of THE MEDICAL NEWS,

SIR: I am preparing a paper upon "The Action and Efficacy of Veratrum Viride in Puerperal Eclampsia," and should like to receive reports of cases treated with this drug by the profession.

Yours truly, F. K. WILLIS.

WATHENA, KANS.

NEWS ITEMS.

The Medical Society of the State of Pennsylvania will hold its forty-fifth annual meeting at Chambersburg, May 21–24, 1895. The following papers will be read: "Address in Medicine," by Dr. I. C. Gable, York. "Sequelæ of Typhoid Fever," by Dr. T. D. Dunn, West Chester. "Treatment of Malignant Tumors by the Toxins of Erysipelas," by Dr. John B. Roberts, Philadelphia. "Treatment of Typhoid Fever," by Dr. James Tyson, Philadelphia. "Prophylaxis of Pelvic Inflammations in Women," by Dr. J. M. Baldy, Philadelphia. "Tuberculosis," by Dr. John M. Batten, Pittsburg. "Treatment of Fistula in Ano by Lange's Method, or Immediate Suture of the Track," by Dr. Lewis H. Adler, Jr., Philadelphia. "Ocular Affections Associated with Lithemia," by Dr. Samuel D. Risley, Philadelphia. "Experience in the Treatment of Diphtheria during Thirty-four Years of Practice," by Dr. William S. Stewart, Philadelphia. "Acute and Chronic Cystitis," by Dr. J. W. Roop, Harrisburg. "Treatment of Nevus," by Dr. H. R. Wharton, Philadelphia. "Report of One-hundred-and-twenty-five Cases of Hernia in which the Radical Cure was Performed," by Dr. Ernert Laplace, Philadelphia. "Ten Minutes in Medical Electricity," by Dr. George S. Hull, Chambersburg. "Present Status of the Sanitary Movement for the Adoption of the Individual Communion Cup," by Dr. H. S. Anders, Philadelphia. "Address in Hygiene," by Dr. Hildegarde H. Longsdorf, Carlisle. "Prevention and Cure of Tubo-ovarian Inflammation," by Dr. G. Betton Massey, Philadelphia. "Movable Kidney," by Dr. Charles P. Noble, Philadelphia. "Oxygen Gas under High Pressure *vs.* Compressed Air for Spraying and Nebulizing in Diseases of the Chest, Throat, Nose, and Ear," by Dr. A. B. Kirkpatrick, Philadelphia. "Necessity for a State System of Registration of Vital Statistics in Pennsylvania," by Dr. Benjamin Lee, Philadelphia. "Carcinoma of the Uterus," by Dr. Thomas S. Cullen, Baltimore, Md. "Address in Surgery," by Dr. C. L. Stevens, Athens. "Late Syphilitic Lesions," by Dr. Edward Martin, Philadelphia. "Rupture of the Tendon of the Quadriceps Extensor Femoris," by Dr. J. J. Buchanan, Pittsburg. "Mental Influence in the Treatment of Disease," by Dr. Theodore Diller, Pittsburg. "Ophthalmia Neonatorum," by Dr. Joseph E. Willetts, Pittsburg. "Treatment of Typhoid Fever by Guaiacol," by Dr. A. P. Hull, Montgomery Station. "When Should Vaginal Incision be Preferred to Abdominal in the Treatment of Pelvic Disease?" by Dr. E. E. Montgomery, Philadelphia. "Pharmacy in the Medical Profession," by Dr. S. S. Good, Meyersdale. "Deaf Mutes—Can Anything be Accomplished by Treatment?" by Dr. Louis J. Lautenbach, Philadelphia. "Microbes and Molds," by Dr. William T. W. Dickeson, Media. "Contribution to the Clinical Study of Typhoid Fever," by Dr. Murray Galt Motter, Lancaster. "Retroflexion of the Uterus when Chronic is Incurable except by the Application of Surgical Methods," by Dr. B. F. Baer, Philadelphia. "Treatment of Earache," by Dr. L. W. Moyer, East Mauch Chunk. "Practical Medicine," by Dr. J. C. Channell, Wrightsville. "Address in Obstetrics," by Dr. W. B. Ulrich, Chester. "Necessity for the Advertisement and Isolation of Certain Contagious and Infectious Diseases," by D. F. Le Moyne, Pittsburg. "Fat in Pulmonary Consumption," by Dr. Thomas J. Mays, Philadelphia. "Massage in Surgery," by Dr. James K. Young, Philadelphia. "Ligation of Arteries in the Treatment of Malignant Disease," by Dr. John H. Packard, Philadelphia. "Carcinoma of the Uterus," by Dr. I. N. Snively, Waynesboro. "Heredity," by Dr. J. K. Garver, Harrisburg. "Epidemic Diseases," by Dr. B. L. Kerchner, Dalmatia. "Management of Cases of Typhoid Fever," by Dr. H. G. McCormick, Williamsport. "Case of Pyelitis in a Boy of Seven Years," by Dr. J. P. Crozer Griffith, Philadelphia. "Medical Green Goods," by Dr. John B. Donaldson, Canonsburg. "Labor at Full Term Complicated by Typhoid Fever," by Dr. William M. Findley, Altoona. "Empyema of the Mastoid and its Relation to Acute Aural Disease," by S. MacCuen Smith, Philadelphia. Address of the President, Dr. John B. Roberts: "The Present Attitude of Physicians and Modern Medicine toward Homeopathy." "Address in Mental Disorders," by Dr. F. X. Dercum, Philadelphia. "Diagnosis of Gastric Lesions by Modern Methods," by Dr. S. Solis-Cohen, Philadelphia. "Typhoid Fever," by Dr. George G. Groff, Lewisburg. "Undue Reliance upon Temperature Records," by Dr. J. Chris Lange, Pittsburg. "Report of a Series of Cases of Laryngeal Diphtheria Treated by Antitoxin, with and without Intubation," by Dr. Edwin Rosenthal, Philadelphia. "Another Word on Adenoid Growths of the Pharynx," by Dr. Harrison Allen, Philadelphia. "Value of an Alcoholic Vapor Bath in the Treatment of Suppression of Urine and Uremia," by Dr. F. S. Nevling, Karthaus. "Forty Years' Experience with Veratrum Viride," by Dr. J. L. Ziegler, Mount Joy. "Clinical Study of the Relation of Accommodation to Convergence," by Dr. Howard F. Hansell, Philadelphia. "Nerve-muscle Atony in Girls," by Dr. Kate D. Miesse, Easton. "Aconitin in Neuralgia," by Dr. J. Newton Hunsberger, Skippack. "The Emotional Brain," by Dr. Benjamin Lee, Philadelphia. "Rational Treatment of Fracture of the Femur near the Hip-joint in Aged Persons," by Dr. E. V. Swing, Coatesville. "Contribution to the Study of Deaf-Mutism," by Dr. Arthur Ames Bliss, Philadelphia. "Report on Hydrophobia," by Dr. Charles W. Dulles, Philadelphia. "Address in Otology," by Dr. L. H. Taylor, Wilkesbarre. "Irregular Forms of Enteric Fever," by Dr. J. C. Wilson, Philadelphia. "Treatment of Tertiary Syphilis," by Dr. Orville Horwitz, Philadelphia. "Bacteriological Examinations in Medicine or Surgery," by Dr. Joseph McFarland, Philadelphia. "Diagnosis and Treatment of Acute Intestinal Obstruction," by Dr. James M. Barton, Philadelphia. "Relief of Some Cases of Functional Nerve-troubles by Curing Eye-strain," by Dr. J. Saylor Brown, Williamsport. "Faith and Therapeutics," by Dr. H. G. Chritzman, Welsh Run. "Vaccine Virus," by Dr. H. M. Alexander, Marietta. "Whither are We Drifting?" by Dr. H. A. Arnold, Ardmore. "Treatment of Typhoid Fever," by Dr. H. A. Mowrey, Marietta. "Phthisis Pulmonalis; Its Prevention and Cure," by Dr. A. Chamberlain, Brooklyn. "Remote and Immediate Causes of Epidemic Influenza," by Dr. W. J. K. Kline, Greensburg. "Auto-intoxication, with Special Reference to Certain Diseases," by Dr. A. Enfield, Bedford. "Hydrocephalus, with a Case Treated and Cured by Tapping," by Dr. H. Garey, Berlin. "Antero-fixation of the Uterus," by Dr. George Erety Shoemaker, Philadelphia.

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American Neurological Association.—The preliminary program of the Twenty-first Annual Meeting, to be held in Boston, on June 5, 6, and 7, 1895, is as follows:

"Insanity and Phthisis, their Concurrence, Coexistence, and Transmutation," by Dr. H. A. Tomlinson, St. Peter. "The Etiology of Obstetrical Paralysis;" "Presentation of a Brain-tumor;" "Exhibition of a Specimen Showing Fracture of the Cervical Vertebræ," by Dr. George L. Walton, Boston. "A Lantern Exhibition of Photo-micrographs of Nervous Histology; Golgi Stains," by Dr. M. Allen Starr, New York. "A Contribution to the Pathology and Morbid Anatomy of Amyotrophic Lateral Sclerosis," by Dr. Joseph Collins, New York. "The Conservative Value of the Play Impulse," by Dr. Irving C. Rosse, Washington. "Must Acute Paranoia Be Admitted into Our Nomenclature?" by Dr. William Noyes, Foxboro. "Auto-mimesis," by Dr. Smith Baker, Utica. "A Case of Hereditary Chorea with Autopsy," by Dr. Charles L. Dana, New York. "Cases of Brain-tumor;" "A Case of Total Hysterical Anesthesia in the Male," by Dr. George J. Preston, Baltimore. "Telegraphers' Paralysis," by Dr. James Hendrie Lloyd, Philadelphia. "The Diagnosis of Hemorragic Cerebral Pachymeningitis," by Dr. William N. Bullard, Boston. "The Association of Tabes and Paralytic Dementia," by Dr. Theodore D. Diller, Pittsburg. "The Localization of Small Gross Lesions in the Pons and Preoblongata," by Dr. Charles K. Mills, Philadelphia. "Report of a Case of Peroneal Muscular Atrophy with Autopsy," by Dr. William C. Kraus, Buffalo. "The Home Treatment of Insanity," by Dr. H. M. Bannister, Chicago. "The Criminal Insane Abroad," by Dr. C. Eugene Riggs, St. Paul. "Report of a Case of Tumor of the Cerebellum, with Autopsy; Operation by Dr. John F. Erdmann," by Dr. E. D. Fisher, New York. "Hyperostosis Cranii (Megalocephalia), with illustration," by Dr. James J. Putnam, Boston. "The Pulse in Insanity—Original Study of Cases," by Dr. Theodore H. Kellogg, Willard. "Report of a Case of Multiple Neuritis in an Infant," by Dr. Graeme M. Hammond, New York. "Two Cases of 'Railway Spine,' with Autopsy," by Dr. F. X. Dercum, Philadelphia. "Fissural Studies. (*a*) Two Philosophers. (*b*) An Apparent Duplication of the Central Fissures," by Dr. Burt G. Wilder, Ithaca. "Pseudo-neurasthenia," by Dr. Morton Prince. "Hysterical Amblyopia and Amaurosis—Five Cases Treated by Hypnotism," by Dr. J. Arthur Broth, New York. "Exhibition of the Brain of a Chimpanzee," by Dr. Thomas D. Dwight, Boston. "The Part of Inhibition in the Physiology of Respiration," by Dr. William T. Porter, Boston.

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The American Pediatric Society will hold its seventh annual meeting at the Virginia Hot Springs, May 27, 28, and 29, 1895. The preliminary program includes the following: Address by the President, F. Forchheimer. Cerebro-spinal Meningitis in an Infant Six Days Old, by T. M. Rotch. Purulent Otitis Media, which Ended Fatally (three cases), by Wm. F. Lockwood. Pyo-pneumothorax (case), by Walter L. Carr. Traumatic Aphasia; Scarlatina Angiosa; Croupous Pneumonia (case), by Samuel

S. Adams. Hyperpyrexia (cases), by Henry D. Chapin. Sarcoma of Kidney in an Infant (case and specimen), by J. Henry Fruitnight. Lympho-sarcoma of Spleen (case and specimen), by George N. Acker. Tetanus Neonatorum, by J. Lewis Smith. Infantile Tetany, by M. P. Hatfield. Tetany (two cases), by Floyd M. Crandall. Amyloid Disease in Children, by B. K. Rachford. Typhoid Fever in Infants Under Two Years—Is it Frequent? by Wm. Perry Northup. The Different Forms of Eruption which Simulate Scarlatina, and their Differential Diagnosis: *a*. Some Forms of Eruption Simulating Scarlatina, by A. D. Blackader. *b*. Scarlatiniform Exanthem, by Charles G. Jennings. *c*. Scarlatina, with Intensified Eruption and Poorly Marked Constitutional Symptoms (several cases), by Louis Starr. *d*. Extensive Gangrene Following Scarlatina, by James C. Wilson. *e*. Difficulty in Differential Diagnosis, by J. P. Crozer Griffith. *f*. Local Treatment of the Skin in the Eruptive Fevers of Children, by A. Seibert. *g*. General Discussion. Cases of Adherent Pericardium in Children, with Enormous Heart-hypertrophy, Chronic Proliferative Peritonitis, and Recurring Ascites, by William Osler. Rupture of the Bladder (case and specimen), by John Dorning. Cardiac Anomalies: *a*. Cor Biloculare. *b*. Pulmonary Veins Opening into Right Auricle. *c*. Imperfect Ventricular Septum in a Man aged Forty-five Years, by William Osler. *d*. Aorta Arising from the Right Ventricle, by George N. Acker. *e*. Patent Ventricular Septum, by A. Jacobi. The Characteristic Features of the Recent Epidemic of Grippe—1894-'95: *a*. Pulmonary Manifestations. *b*. Aural. *c*. Glandular. Discussion by L. Emmett Holt, Wm. Perry Northup, Henry D. Chapin, and A. D. Blackader. Antitoxin in Diphtheria: *a*. Results in Laryngeal Cases. *b*. The Cause of Death in Fatal Cases. *c*. Efficiency for the Purpose of Giving Immunity. *d*. Immunizing Effect of Antitoxin in Diphtheria, by F. Gordon Morrill. *e*. Personal Experience with Diphtheria-antitoxin and Blood-serum Injections, by Augustus Caillé. *f*. The Value of the Antitoxin of Diphtheria and its Toxic After-effects, by A. Seibert. Cases Apparently Diphtheria, but in which the Diphtheria-bacillus is not found, by E. M. Buckingham. Cases of Scurvy, by A. Jacobi.

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The American Microscopical Society, under the presidency of Professor S. H. Gage, will hold its next meeting at Cornell University, in Ithaca, N. Y., August 21, 22, and 23, 1895, that is, a week before the meeting of the American Association for the Advancement of Science, which is to be held in Springfield, Mass. Ithaca is equally attractive to the student of natural history and to those who love beautiful scenery, and is an ideal place for holding the meeting. The facilities of the University and its equipment in all lines for carrying on microscopic work add to the attractiveness of Ithaca as a place of meeting. The University buildings, which will be at the disposal of the Society, are especially adapted for the formal presentation of papers, blackboard illustrations, hanging of diagrams, etc., as well as for any demonstration that authors may desire to make.

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The Academy of Natural Sciences of Philadelphia.—A Section of Anthropology was organized on April 30, 1895, under the chairmanship of Harrison Allen, M.D. The purpose of this Section is the presentation of original papers, the statement of interesting facts, the exhibition of illustrative objects, and the discussion by the members of subjects proposed on all matters included under the term anthropology. The meetings of the Section will be held at the Academy on the evenings of the second Friday in each month, from September to May, inclusive, at 8 o'clock. The first meeting of the Section was held on the evening of May 10th.

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Dr. Julius Kaemmerer, one of the oldest physicians of Atlantic City, died May 13th, aged sixty-five years. Dr. Kaemmerer was born in Rhenish Bavaria, and after graduating from a preparatory school at Neustadt went to the University of Heidelberg. While a student there the German war broke out, and young Kaemerer, with many other students, espoused the cause of the revolutionists. When the revolution failed he fled to Paris in 1850, where he continued the study of medicine. He came to the United States in 1862, and for eighteen years practised successfully in Philadelphia. In 1880 his health began to fail, and he went to Atlantic City, where he has since resided.

* * *

Ex-Surgeon-General Charles Sutherland, U. S. A., died on May 10th, at Washington, at the age of sixty-six. He was a graduate of the University of Pennsylvania, and in 1852 became an Assistant Surgeon in the United States Army; five years later he was made a Captain; and after a further five years a Major. In 1866 he became an Assistant Medical Purveyor, with the rank of Lieutenant-Colonel, and in 1876 a Colonel. In 1886 Dr. Sutherland became Medical Director of the Division of the Atlantic, and in 1890 he was appointed Surgeon-General, with the rank of Brigadier-General. He was retired in May, 1893.

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The Canadian Medical Association will hold its annual meeting in Convocation Hall, Queen's University, Kingston, on August 28th, 29th, and 30th.

Dr. James Stewart, of Montreal, will deliver the address in Medicine, and Mr. J. H. Cameron, of Toronto, the address in Surgery. It is intended to have a skin clinic, at which several interesting cases will be presented and discussed by prominent dermatologists. There will probably be other clinics as well.

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The State Board of Medical Examiners, representing the Medical Society of the State of Pennsylvania, will meet in Philadelphia, corner of Broad and Pine Streets, and in Pittsburg, Council chambers, June 18, 1895, at 2 P.M., to examine applicants for licence to practise medicine in Pennsylvania.

Blank applications and all necessary information can be obtained from the Secretary of Internal Affairs, Harrisburg, Pa.

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House-Physician Erie County Hospital of Buffalo, N. Y.—A competitive examination of candidates for the position of House Physician in the Erie County Hospital will be held at the Hospital, Buffalo, N. Y., May 28, 1895, at 3.30 o'clock, P.M. There are three vacancies to be filled June 1st. Applications should be addressed to Dr. E. J. Gilray, Medical Superintendant of the Hospital.

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ORIGINAL ARTICLES.

RECENT IMPROVED METHODS IN INFANT-FEEDING, WITH ESPECIAL REFERENCE TO MODIFIED MILK.[1]

BY R. TUNSTALL TAYLOR, B.A., M.D.,
SURGEON TO THE HOSPITAL FOR THE RELIEF OF THE CRIPPLED AND DEFORMED, BALTIMORE, MD.

DURING my recent residence and association with the orthopedic surgeons of Boston and New York I became most favorably impressed with the newer and more scientific methods used in infant-feeding by many of them, to whom it is a most important problem, especially in those rachitic and other infants under two years of age that come under their care. As this feeding applies not only to the infants that are treated by orthopedic surgeons, but also and more properly to those that are in the hands of general practitioners and pediatrists, I trust that the points I make may not be without value to some of you here. To those who are familiar in part with the methods of "modifying" milk, as proposed by Dr. Rotch, of Boston, I ask forbearance, but trust some of my statements may be new to them.

Perhaps it may be well to consider the conditions we have to meet in striving for the best obtainable alimentation of breast-fed or artificially nourished infants. In the former we have three factors to aid us in drawing our conclusions as to the result of such feeding: 1st. The general condition of the infant as to power of digestion, growth, and development; 2d. The condition of the mother; and 3d. The analysis of the mother's milk. In the artificially nourished we have to consider the general well-being of the infant, and also the analysis of the cow's milk it is receiving.

It is not the purpose of this paper to go into the physiology of infant-digestion, but suffice it to say that the chief factors in the production of the more common disturbances of infant-digestion, growth, and development, with the deformities in part due to malnutrition, may be divided into three classes. The first of the factors in the production of infantile dyspepsia is to be attributed to a diet that consists entirely or in part of cereals or starchy food, given before the end of the first year, as the secretions of the salivary and pancreatic glands are not sufficient until that time to perform properly their functions. Perhaps this class of cases includes the larger number of sick infants whose mothers bring them to our dispensaries, at times with shocking deformities and with proud statements that they are "rice-water," "oat-meal," or "corn-starch" babies, or have been brought up on some of the so-called "foods" which we see advertised in our street-cars and in our popular magazines everywhere. One of the worst cases of acute rachitis that has come under my care may be attributed to this cause, and has the following history:

H. E., a boy, thirteen months old, had for the first three weeks of life been breast-fed, and at the expiration of that time was put on a patent food for a week. From the beginning of his second month until three weeks before I first saw him he had received another proprietary food and condensed milk; for the three weeks prior to the first visit his nourishment was a third so-called "food" and cream. While taking the second patent food and condensed milk he had what is said to have been cholera infantum, and for two-and-a-half months after that he exhibited symptoms of severe pain on being moved, and great care had to be exercised in dressing him, especially in putting his arms in the sleeves. He was brought to me for this pain and tenderness, for the marked bowing of the back in the dorso-lumbar region, and sweating about the head.

On examination the child presented an appearance of marked anemia, with a sallow, yellow color, and there was also extreme emaciation, giving the face the aspect of an old man, with deepened naso-labial furrows. The eyes were prominent, and the palpebral folds were of a grayish-blue color. The blood-count showed 2,000,000 red blood-corpuscles and 28,000 white to the cubic millimeter. The hemoglobin was 55 per cent. The head was abnormally large, especially in the transverse diameter, from the prominence of the frontal and parietal bosses, with the anterior fontanel widely open (3x2 cm.), and the intracranial pressure was marked. Beading of the ribs was conspicuous, as were the enlarged radial epiphyses. The lower ribs were everted over a distended abdomen, giving the characteristic groove above. The back was bowed, but the long bones were straight. Slight bronchitis was noted. The child had never shown a disposition to walk or talk, and but two teeth appeared; these were in the lower jaw, and had been cut when the child was six months old.

Speaking of this popular tendency of using patent foods, Rotch says, in an article on "The General

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[1] Read before the Ninety-seventh Annual Meeting of the Medical and Chirurgical Faculty of Maryland, April 26, 1895.

Principles Underlying all Good Methods of Infant-feeding:"

> "In substitute-feeding our aim is to copy the human breast-milk in every possible detail. We also should consider as foreign matter, to be rigidly avoided, any element which we know is not to be found in the fluid which we are copying. It would seem hardly necessary to suggest that the proper authority for establishing rules for substitute-feeding should emanate from the medical profession, and not from non-medical capitalists. Yet when we study the history of substitute-feeding as it is represented all over the world, the part which the family physician plays, in comparison with the numberless patent and proprietary foods administered by the nurses, is a humiliating one, and one which should no longer be tolerated. I plead in the name of common humanity, as well as in that of the intelligent and scientific reputation of our profession, that this representative body of American physicians should, in its endeavor to advance the general subject of infant-feeding, record itself as opposed to the use of patent or proprietary food of every description. If we are abreast of the times, and if we will but recognize and do justice to the work which has lately emanated from our own profession, we surely will not hesitate boldly to relegate to oblivion the statements of the food-proprietors, which, on box and can, on bottle and on printed circular, attempt to stem the slow but inevitably progressing wave of scientific investigation."

The second class of dyspeptic infants comes under the care of the doctor, from the child receiving cow's milk, which "agreed with it," so we are told, "during the cold weather, but since the summer set in it has not thrived on it," or perhaps the child has a severe enteritis or worse. This is often to be attributed, we find, to not heating the milk to a point sufficiently high to destroy the pathogenic and fermentative bacteria, but *not so high* as to affect the nutritive value of the ingredients in the milk.

The third class comes from, say, a child receiving a pure, properly heated milk, but which does not increase in weight and strength, and has more or less disturbance of digestion. This is invariably due to the strength of the milk, which, from the relative proportions of its constituents not being adapted to the requirements or power of the child's digestion, is unlike mother's milk in composition. The ingredient which, as a rule, causes the most trouble is the albuminoid, as it is in excess in cow's milk as compared with human milk. Of course, these three classes of causes of digestive disturbances may all be present in any one infant, and our endeavors should be to correct them all.

Let us consider first the normal breast-milk of a healthy mother. It gives on analysis a proportion of:

Fat	3 to 4	per cent.
Sugar of milk	7	"
Albuminoids or, as they are more properly called, proteids	2	"
Ash	0.1 or 0.2	"
Total solids	12 to 13	"
Total liquids	87 " 88	"

Such milk is alkaline and sterile. The temperature is from 98°–100° F.; the specific gravity from 1028–1032. This is known as "4–7–2" milk, representing the percentages of fat, sugar, and proteids. Breast-milk is secreted in an *amount* and *quality* proportionate to the infant's age and size; therefore we cannot assume that *all* babies will digest this "4–7–2" milk well and gain in weight on it, as an analysis of a dozen different samples of breast-milk from as many mothers may show variations of from 0.5 to 2 per cent. in the different ingredients; yet all their infants may be thriving. In other words, each baby thrives best on its peculiar breast-milk. But in general terms we may assume the "4–7–2" milk as the average and model, but not an exact formula to be used in *all* cases as a set, inelastic prescription.

If a child is breast-fed and is doing well, what are we to do if we have charge of it? Nothing? No; we are to send a specimen of that mother's milk to a chemist to be analyzed, so that we may know exactly what the child is receiving; and if the mother's milk should be vitiated from any cause, such as sickness, grief, return of menses, etc., and it seems imperative that an artificial milk is to be furnished for the infant's welfare, we should get one as near as possible like that in composition on which the child thrived. This the known analysis enables us to do. On the other hand, suppose a nursing child is doing badly and the analysis of the mother's milk (which should be made in all cases) shows it to be below par, through none of the causes that are usually responsible for its sudden deterioration, two alternatives are open to us: One is to substitute feeding with cow's milk, modified so as to approach as nearly as possible the *normal average mother's milk* or "4–7–2;" but the other alternative is possible in many cases, and that is, so to build up the mother's health as to modify *her milk*. An analysis of such a delicate mother's milk may give us: fat 2 per cent., sugar 7 per cent., and proteids 4 per cent., instead of fat 4, sugar 7, and proteids 2. That which is doing the harm to the child is the presence of too much proteids and of too little fat; so that first we have to lessen the proteids and then increase the fat. The proteids in breast-milk are lessened by exercise, long walks, etc., without unnecessary fatigue. How are we to increase the fat? Fat food will not increase the fat in breast-milk, but lean and rare meats and other albuminoids will.

Before leaving the question of the analysis of breast-milk it may be well to refer briefly to Holt's methods of "Clinical Analysis of Breast-milk,"[1] as it may be that certain physicians will be compelled to make the milk-examinations themselves. To those who do not live within reach of a competent analytic chemist, and for families that cannot afford such an analysis, this is our best way out of the difficulty. In such cases we should determine the specific gravity, reaction, microscopic appearances, the amount of fat, and, approximately, the amount of albuminoids.

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[1] L. E. Holt: Archives of Pediatrics, vol. x, pp. 193–205.

The specific gravity can be determined by a small urinometer, and should in health be, as I have said, from 1028 to 1032, abnormal variations being from 1017 to 1036. An increase of fat lowers the specific gravity and an increase of proteids and other solids raises it. The reaction is easily determined by litmus-paper in the usual way. The microscopic examination is unimportant except in determining the presence of colostrum-corpuscles, which if present after the second week will disagree with the child and denote a pathologic condition. The corpuscles are present occasionally during menstruation and in markedly anemic mothers, and frequently as the result of nervous impressions, such as fatigue, grief, fright, and sexual excitement. If the corpuscles are present in large numbers after the second week, lactation should be, temporarily at least, suspended. The presence of foreign matters, such as epithelial cells, blood, and pus, in milk hardly requires a microscopic examination to determine them, as other signs of mastitis will be present.

The inorganic salts in breast-milk vary but little and are in such minute quantities, and of their physiologic functions we know so little, that their consideration may be dropped. The sugar in breast-milk, according to Holt, Leeds, and Pfeiffer, is subject to but slight variations, perhaps less than 0.5 per cent.

In contrast with the average constancy in the relative proportions in the sugar and the salts, we are struck with the marked variations in the fats and proteids. According to various observers,[1] we may have fat varying from 1.12 to 7.60 per cent., and proteids from 0.57 to 4.86 per cent. It is these ingredients that by their variation frequently cause disturbances of digestion in the nursling. To determine their amount in each specimen of breast-milk is of the greatest practical importance.

For practical purposes, according to Holt, we may determine the fat, volumetrically, by allowing the cream to rise for twenty-four hours in a 10-c.cm. cylinder, which is graduated into 100 parts, and the reading made directly in per cent. at the expiration of that time. The cylinder of milk should be kept at as near a temperature of 70° F. as possible while the cream is rising. Absolute cleanliness of the cylinder is a necessary precaution before use, to prevent souring, and the last few drops should be added carefully with a pipet to reach exactly the zero-line and avoid milk running down the sides of the cylinder and thus obscure the reading. To avoid error, the reading is to be made from the upper *outer* edge of the meniscus of cream. Rarely are more than twenty-four hours required for a reading, *i. e.*, for the cream to rise. It has been found by careful comparative analysis that approximately the cream bears a constant relation of 5 to 3 of the fat, so that if our reading of cream is 7 the fat in that milk will be 3-5ths of 7, or 4.2 per cent.

The proteids cannot be determined directly by clinical examination, but, from the fact that the sugar and salts are practically constant, we can consider the specific gravity as depending on the variations in the fat and proteids. We have seen that if the fat is high the specific gravity is low, and if the proteids are high the specific gravity is high. Now if we have determined the specific gravity and the cream or fat, we can approximate in general terms the amount of proteids by a natural process of reasoning. From 400 samples of analyzed breast-milk Holt has devised the following convenient table to determine the wide variations in the proteids, which it is of such importance in practice to know.

	Sp. gravity at 70° F.	Cream 24 hours.	Proteids (calculated).
Normal average .	1031	7 per cent.	1.5 to 2 per ct.
Healthy variations	1028–1029	8 to 12 per ct.	Normal (rich milk).
" "	1032–1033	5 to 6 per ct.	Normal (fair milk).
Unhealthy "	Below 1028	High above 10 per ct.	Normal (slightly below).
" "	" "	Normal 5 to 10 per ct.	Low.
" "	" "	Low (below 5 per ct.)	Very low (very poor milk).
" "	Above 1033	High	Very high (very rich milk).
" "	" "	Normal	High.
" "	" "	Low	Normal or nearly so.

From this table we see that the normal average breast-milk has a specific gravity at 70° F. of 1031, and on standing twenty-four hours yields 7 per cent. of cream, and from 1.5 to 2 per cent. of calculated proteids. Healthy variations from this are a specific gravity of from 1028 to 1029 or from 1032 to 1033, cream from 8 to 12 per cent. or from 5 to 6 per cent., with a normal amount of proteids. On the other hand, if we have a specific gravity below 1028 or above 1033, with the fat normal, above 10 per cent. or below 5 per cent., we may deduce that our proteids or the milk in general is not adapted to the needs of the child. These unhealthy variations are well shown in the table.

The sample of milk should be taken from the half-emptied breast, as the first that comes is more watery, and the last richer than the average.[1] If possible, it is of course better to have the exact and careful analysis of a competent chemist.

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[1] Leeds: THE MEDICAL NEWS, July 21, 1883.

(To be concluded.)

A CONTRIBUTION TO THE STUDY OF THE ETIOLOGY OF MEMBRANOUS RHINITIS.

By MAZŸCK P. RAVENEL, M.D.,
ASSISTANT IN BACTERIOLOGY IN THE LABORATORY OF HYGIENE, UNIVERSITY OF PENNSYLVANIA.

From the Laboratory of Hygiene, University of Pennsylvania.

(Concluded from page 540.)

During the past year I have had the opportunity of studying ten cases of typical membranous rhinitis, the histories of which are given in detail:

Case I.—Annie H., white, five years old, was sent by Dr. B. A. Randall. She had been under treatment for some time for ear-trouble, which was about cured, the suppuration having ceased. She gave a history of having played with a cousin, who had at the time a "sore-throat," but who had recovered when the patient presented herself. A second child of the same family had no trouble whatever. Examination showed the right nostril to be occluded by a thick and somewhat gelatinous membrane, which was detached with difficulty, leaving a bleeding surface. The left nostril secreted pus, and formed ill-smelling crusts—once a large cast—but showed no membrane at any time. No part of the fauces or of the posterior nares was affected. Cultures were made on blood-serum (Loeffler's) after the third treatment, and the Klebs-Loeffler bacillus was found in abundance. The organism was isolated, and proved fatal to a guinea-pig of about 350 grams weight, in sixty hours, the dose being one loopful of a culture on blood-serum forty-eight hours old. The autopsy showed the typical lesions caused by the Klebs-Loeffler bacillus, and the organism was recovered from the site of inoculation.

The child made a good recovery under local treatment only, and there were at no time any constitutional symptoms of moment, nor have there been any sequelæ.

Case II.—Annie R., white, six years old, was sent by Dr. B. A. Randall. She had been troubled for three weeks with a discharge from the nostrils, which excoriated the upper lip. The nostrils became occluded at night, causing restlessness. There were no constitutional symptoms that attracted attention, and the child was brought to the clinic at the Children's Hospital on account of the "sore nose." An examination showed the formation of a false membrane in both nares, not very thick or extensive, and limited to the anterior portion. Cultures from the membrane were made on blood-serum, and also from the discharge at the orifice of the nares. In both the Klebs-Loeffler bacillus was found in large numbers. Pure cultures were isolated from the membrane only, and proved fatal to a guinea-pig of about 350 grams weight in forty hours, the dose being a loopful from the surface of a culture on blood-serum forty-eight hours old.

The fauces and posterior nares were at no time affected, and the child made a good recovery under local treatment, followed by no sequelæ.

Case III.—Herbert B., white, ten months old, was sent by Dr. T. S. Westcott, to the clinic of the University Hospital for treatment for bronchitis. The child showed symptoms also of a mild rachitis. On the twenty-fourth day of treatment the mother reported that the child had been restless the night before, and just before coming to the dispensary there had been a discharge of "blood and corruption" from the nose. Examination showed the left nostril to be occluded by a soft, somewhat gelatinous membrane. Cultures were made on blood-serum, and the Klebs-Loeffler bacillus isolated. A guinea-pig of about 400 grams weight was inoculated, but the culture did not prove fatal. At the point of inoculation a slough formed the size of a silver half-dollar, leaving an ulcer with thick, indurated edges. The animal was killed on the eighteenth day. The organs were normal in appearance to the naked eye. The retro-peritoneal glands were considerably enlarged, and the peritoneum was injected. Sections of the tissues from the site of inoculation showed a condition of necrosis, accompanied by nuclear fragmentation, quite similar to that observed in animals that have died after inoculation with virulent diphtheria-bacilli, though it was somewhat less in extent.

The constitutional symptoms in this case were at no time alarming, and easily accounted for by the bronchitis, which had existed some four weeks before any trouble with the nose had attracted attention. The fauces were at no time affected, and the patient recovered under local treatment, with a prescription given for the relief of the bronchitis. Diphtheria had occurred in houses on each side of the patient's home.

Case IV.—Josephine McI., eleven years old, was sent by Dr. W. J. Freeman for the treatment of a sore nose, which had begun three weeks before. The child slept with the mouth open, and snored. There was some headache and fever every day. Examination showed a membranous deposit in both nares, especially marked on the right side. Membrane was found also on both tonsils and on the pharyngeal tonsil, also in the back part of the left naris. Cultures on blood-serum were made from the nostrils only, and found to contain the Klebs-Loeffler bacillus in large numbers. One loopful of a forty-eight-hour-old culture on blood-serum was introduced into a guinea-pig of about 400 grams weight, and caused death in fifty hours, with typical lesions.

This child made a good recovery under local treatment. She was the youngest of a family of eight, all of whom remained perfectly well. She had no severe constitutional symptoms, and no sequelæ followed.

In this case it was impossible to tell the seat of the primary lesion. The nose-trouble was first noticed, and there were at no time any symptoms referable to the larynx or fauces. It is possible that this was a case of faucial diphtheria, with secondary involvement of the nares. In such cases, however, the membrane usually disappears from the fauces, while it persists in the nose.

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[1] A small and convenient hydrometer and cremometer for these clinical examinations can be obtained from Hynson & Westcott, corner of Charles and Franklin Streets, Baltimore.

Case V.—Lizzie McG., white, six years old, was sent by Dr. W. J. Freeman from the dispensary of the Polyclinic Hospital. The nose had been "sore" for three weeks when the patient applied for treatment, and during much of the time was occluded. There was considerable discharge, often bloody, and the external opening was excoriated. The child was restless at night, her appetite was poor, and she complained of a pain across the nose below the eyes. Examination showed a mild follicular pharyngitis, and the pharyngeal tonsil was somewhat enlarged. On the right side of the septum was a thin pseudo-membrane, while the left side showed some ulceration. The glands below the angle of the lower jaw were enlarged and tender. Cultures from the membrane in the right nostril were made on blood serum, and the Klebs-Loeffler bacillus was found present in large numbers. Considerable difficulty was found in obtaining it in pure culture on account of its feeble growth. One loopful from a blood-serum culture was inoculated into a guinea-pig of about 350 grams weight, and caused death on the seventeenth day. A slough the size of a silver twenty-five-cent-piece had formed at the site of inoculation, and the edges of the ulcer were much thickened. There was much increase in pleural fluid, and the retro-peritoneal glands were considerably enlarged. The adrenals were paler than normal and of the usual size. Two days before this patient was sent to me, and when treatment had not been begun, cultures were made by Dr. S. S. Kneass, bacteriologist of the Polyclinic Hospital, and from them he isolated a culture of the Klebs-Loeffler bacillus, which proved fatal to a guinea-pig of about 500 grams weight in sixty hours. At no time during the progress of the disease were the constitutional symptoms marked, and a good recovery was made under local applications, there being no sequelæ. The source of infection could not be traced.

Case VI.—Louisa McG., nine years old, a sister of Case V, and who had been sleeping in the same bed, was sent by Dr. W. J. Freeman. This child's nose had just begun to discharge the day before a thin muco-purulent fluid. She had no constitutional symptoms whatever, and did not complain of any soreness in the nose. Examination showed the mucous membrane of the anterior nares to be somewhat injected and with a thin exudate on the surface of the same character as the discharge. Cultures were made on blood-serum from this exudate, and a bacillus resembling the Klebs-Loeffler closely was found in considerable numbers. Much difficulty was experienced in obtaining it in pure culture on account of its feeble growth. One loopful from the surface of a culture on blood-serum caused death in a guinea-pig of about 350 grams weight on the fifteenth day. The lesions found were not characteristic of the Klebs-Loeffler bacillus. There were very slight edema and thickening at the site of inoculation, and the organism was not found here either in cover-slip preparations or in cultures. The liver, spleen, and kidneys were normal in appearance, while the adrenals were slightly enlarged and somewhat injected, but not much darker than normal. The retro-peritoneal glands were of the normal size. There was no increase of the pleural fluid, and very little, if any, in the peritoneal cavity.

Microscopic examination of the tissues also gave negative results. In none of them were the changes described by Welch and Flexner[35] found, and beyond intense congestion there was no departure from the normal observed.

This child recovered promptly under local treatment, and at no time showed any constitutional symptoms. In neither case did the fauces become involved. Some two weeks later the mother of these children presented herself at the Polyclinic Hospital on account of a discharge from the nostrils, without constitutional symptoms. Cultures were made by Dr. S. S. Kneass at once, but he failed to find any Klebs-Loeffler bacilli. The discharge ceased in the course of three or four days under local treatment.

Case VII.— —, white, five years old, was seen at the Children's Hospital. While under treatment for some other trouble this child developed symptoms referable to the nose, with occlusion and a muco-purulent discharge. I did not see the child until it had been under treatment for nearly a week. The right nostril was almost occluded by crusts of dried secretion, but I could find no membrane. The resident physician reported that a membrane had existed in the anterior portion of the right naris. Cultures on blood-serum were made from the discharge at the external orifice, and also from the secretion higher up. In the latter an organism was found identical morphologically with the Klebs-Loeffler bacillus. Repeated attempts were made to obtain it in pure culture, but in every instance I failed to find it in cultures made directly from the original tube. I believe it to have been the Klebs-Loeffler bacillus possessed of such low vitality that it failed to grow even in the second generation. The patient made a good recovery under local treatment, the fauces never became involved, and there were no sequelæ.

Case VIII.— —, six-and-a-half years old, was sent by Dr. L. J. Hammond. The local condition had been noticed only a short time before the patient applied for treatment. There were no constitutional symptoms of moment. The membrane was confined to the left nostril. Cultures on blood-serum were made before any local applications were made. I failed to find the Klebs-Loeffler bacillus, and the growth was made up largely of a large coccus. An interesting feature of this case was the profuse hemorrhage when the membrane was dislodged, even by such means as blowing the nose or the application of hydrogen dioxid. No history of contagion could be traced, and five children of the same family remain well. The case is still under treatment at this time.

Case IX.—Thomas M., white, five years old, was sent by Dr. W. J. Freeman, for treatment at the dispensary of the Children's Hospital on account of occlusion of the nostrils, accompanied by a somewhat bloody discharge. When an infant, there was some trouble with the nose, which had ceased under treatment by the family physician, and there had been no return of it until five days before. Two months before the present attack the patient had suffered from earache and a discharge from both ears, for which there had been no treatment. The present attack began with the symptoms of an ordinary coryza. The nostrils were occluded by a thick, dense membrane, which when removed left a bleeding surface. No history of contagion could be traced. There had been no constitutional symptoms noticeable, and the membrane was confined entirely to the nose. At the time of writing the patient is doing well under local treatment.

Cultures made on blood-serum from bits of the membrane showed the Klebs-Loeffler bacillus in large numbers. One loopful from a blood-serum culture thirty-six hours old caused the death of a guinea-pig of about 350 grams weight in forty hours. The lesions were characteristic. There were much injection and edema at the point of inoculation; the pleural fluid was much increased; the adrenals were enlarged and dark-colored, and the retroperitoneal glands were enlarged and injected.

Case X.—George M., white, two years old, was sent by Dr. W. J. Freeman. The child applied for treatment at the dispensary of the Children's Hospital, on account of occlusion of the nostrils and a bloody discharge, first observed about five days before. Both nostrils were occluded by a dense membrane covering the entire surface as far as visible. There were no general symptoms, the child being perfectly well apparently. No history of contagion could be traced. Cultures on blood-serum were made from the false membrane, and the Klebs-Loeffler bacillus was found present in large numbers. One loopful of a pure culture on blood-serum forty-eight hours old killed a guinea-pig of 350 grams weight in sixty hours, the lesions being typical. There were considerable edema and thickening about the site of inoculation. The adrenals were enlarged, dark-colored and congested, and the retro-peritoneal glands were much enlarged. There was no increase in the pleural fluid.

This child is still under treatment and doing well under local applications only.

Through the kindness of Dr. W. J. Freeman I am enabled to publish the following cases, which are of unusual interest and importance, as it is likely they represent a series of infections that started with the first child, who was sick with membranous rhinitis. It is to be regretted that the histories are not more complete as regards the bacteriologic examinations:

Case XI.—Philip G., white, five years old, applied for treatment at the clinic of the Children's Hospital, on March 24, 1894, on account of a discharge from the nostrils that had been first noticed three weeks before. There had been no constitutional symptoms severe enough to attract attention, and relief was sought mainly for the "sore nose." The left inferior turbinated bone was found to be covered with a false membrane, and on the pharyngeal tonsil there was a muco-purulent exudate. The child made a good recovery under local treatment, the fauces did not become involved, and there were no sequelæ.

The bacteriologic examination was made by Dr. W. S. Carter, who found the Klebs-Loeffler bacillus present. The degree of virulence was not ascertained.

Case XII.—Elizabeth G., white, eighteen months old, a sister of Case XI, applied for treatment at the Children's Hospital on May 1, 1894, on account of a thick discharge from the nostrils, first noticed the previous week. There was a membrane on both sides of the septum and on both inferior turbinated bones. Local treatment was employed, and after several weeks the child was discharged, apparently well, though it was found to be impossible to examine the naso-pharynx thoroughly, and it is here that the membrane is apt to remain after it has disappeared from the more-readily accessible parts. On August 27, 1894, the child was brought to the medical dispensary of the Children's Hospital on account of a swelling of the throat. It was admitted to the wards, but on the following day the evidences of diphtheria were so marked that it was transferred to the Municipal Hospital, from which institution it was discharged on October 2d. There is no record of a bacteriologic examination in this case when the nose only was affected. When the throat became involved an examination was made by Dr. W. S. Carter, and the Klebs-Loeffler bacillus was found. During the first attack there were no constitutional symptoms of any moment.

On October 5, 1894, Annie G., nine years old, a sister of Cases XI and XII, was brought to the Children's Hospital, complaining of headache, pain in the eyes and throat, and dyspepsia, the symptoms dating from the day before. There was a fibrinous exudate from the crypts of both faucial tonsils, and from the lacunæ of the right lateral fold, while the pharyngeal tonsil was acutely inflamed. Cultures made from the exudate on the tonsils showed the Klebs-Loeffler bacillus, and the child was transferred to the Municipal Hospital. On October 30th she was discharged.

On October 6, 1894, Helen K., white, ten years old, applied to Dr. Freeman's clinic at the Polyclinic Hospital for treatment, complaining of sore-throat. An exudate from both faucial tonsils was found, and a slight deposit on the pharyngeal tonsil. The cervical glands were somewhat enlarged. There was no more prostration than is usually seen in cases of lacunar tonsillitis. On October 9th a slight exudate was seen on the left anterior half-arch, and this had increased by the next day. On October 10th the child was sent to me, and cultures were made on blood-serum from the patch of exudate on the half-arch, which contained the Klebs-Loeffler bacillus in large numbers. The patient recovered under local treatment, and cultures made on October 22d showed no Klebs-Loeffler bacilli. She lived in the same house with the three preceding cases, and was a playmate of Annie G.

Several of the authors quoted as having reported cases of membranous rhinitis do not give the number or the details, so that I have not been able to ascertain with accuracy the total number on record. I have collected in all about seventy-seven cases, including those given in this paper; but these figures are no doubt smaller than they should be. In forty-one there is a clear record of a bacteriologic examination, and in thirty-three the Klebs-Loeffler bacillus was found, while in one the result was doubtful. In several other cases the membranes were examined, and found not to differ from those of diphtheria. In all of the cases the disease ran a benign course, and in all but a few the membrane was limited exclusively to the nose, and the constitutional symptoms were not marked or were entirely absent.

It is important to note these facts, as many writers regard the absence of constitutional symptoms and the limitation of the membrane to the nose, with no disposition to extend to the fauces, as cardinal points in the diagnosis from diphtheria. I believe the histories here given will show this idea to be fallacious. The most virulent cultures of the Klebs-Loeffler bacillus have more than once been obtained from those patients in whom the general disturbance was very slight or entirely absent. For this very reason these cases are especially dangerous, as there is little or nothing to attract attention to them, and they are allowed to associate with playmates as usual.

In the great majority of cases, if not in all, the bacteriologic diagnosis is the only safe one, and I would urge that all should be considered as diphtheria until the contrary has been proved by cultural methods. In the meantime isolation and disinfection should be insisted upon. Should the Klebs-Loeffler bacillus be found present, it seems needless to say that these should be regarded as cases of diphtheria, and all the safeguards usually employed against this disease should be rigorously enforced.[1]

[Note.—As this article goes to press there appears an important communication on the subject by Gerber and Podack (*Deutsches Archiv für klinische Medicin*, Band 54, Hefte 2 and 3, pp. 262–304), in which the nature of membranous rhinitis is discussed *in extenso*. Unfortunately time does not permit of an analysis of the contents being presented here; it must suffice to say that of five cases of *rhinitis fibrinosa* studied by them, the Klebs-Loeffler bacillus was found in all. The paper contains matter having an important bearing on other aspects of the subject.]

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The National Association of Railway Surgeons, at its recent annual meeting at Chicago, elected the following officers: *President*, Dr. J. B. Murphy, of Chicago; *Secretary*, Dr. D. E. Welsch, Grand Rapids, Michigan; *Treasurer*, E. R. Louis, Kansas City.

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[1] I desire to express my obligations to Drs. Randall, Freeman, Westcott, and Hammond, through whose kindness I have been able to study these cases, and who have courteously furnished the clinical histories, with permission to publish them; and to Dr. A. C. Abbott, First Assistant at this Laboratory, who has taken much interest in the work, and to whom I am indebted for valuable advice and assistance.

CLINICAL MEMORANDA.

TWO CASES OF LARYNGEAL DIPHTHERIA INTUBATED; TREATED WITH THE ANTITOXIN—FOLLOWED BY DEATH.

BY EDWIN ROSENTHAL, M.D.,
OF PHILADELPHIA.

IN February I wrote to the editor of THE MEDICAL NEWS that I wished to report a failure in the use of antitoxin; since then, having had another case to record, I awaited further experiments, to determine what the real cause of failure might be, whether ascribable to the use of the antitoxin or to other causes. These investigations were such that time was consumed before they were concluded, so that before presenting my cases another case was recorded from Brooklyn, N. Y., in which death was ascribed to the injection of the serum. In the latter case there was a mistake, first, in the assertion, and, second, in the subsequent investigations. Had I followed this procedure, one that my interest in the new remedy prompted, I might have been led into the same error, and thus would have unconsciously thrown some doubt upon the efficacy of the antitoxin-treatment. My cases briefly were these:

CASE I. (Occurring in the practice of Dr. J. J. Owen.)—M. E., aged one year and seven months, a white male child, of American parentage, suffering from laryngeal diphtheria, was seen on the third day of the disease, and intubated by myself with a No. 1 O'Dwyer tube, at 9 A.M., February 24, 1895. An injection of 10 c.cm. Behring's antitoxin No. 2 (1000 normals) was made in the scapular region in the usual way, a Koch 10 c.cm. syringe being used, the parts having been previously washed with alcohol, soaked in corrosive cotton, and after injection sealed with iodoform-collodion. The condition of the patient and the indications were good. Dr. Owen gives me the following summary of the progress of the disease until death, 10 A.M., February 26, 1895, forty-nine hours after intubation: Six hours after injection the temperature rose to 104.5°; the pulse-rate was 160; the respirations 60. Despite cold pack, sponging, strychnin, whisky, and the usual remedies, the bad symptoms steadily progressed, the temperature being at times 106°, the respirations 80, and the pulse 180, until death. The antitoxin used in this case was obtained from the American agents of the German manufacturers, and had as investigation-marks the following:

Op. No. 150.
Tested (geprüft) January 16, 1895.
Filled (gefült) January 18, 1895.

Whilst making the injection I was struck with the fact that this serum was turbid, but the bottle being sealed, and being well acquainted with the material, I had no fear of its genuineness. Dr. Owen had two other bottles; I obtained one of them and sent it to Dr. Abbott, of the Laboratory of Hygiene, University of Pennsylvania, for examination. I received the following report:

The bottle of antitoxin-serum labelled

"Diphtheria Remedy Behring—Op. No. 150.
"Farbewerke vormo Meister Lucius and Brünin g.
"Höchst a M., Germany."

has been tested, and, according to the laboratory tests, we find it to be correct. It protects guinea-pigs against *ten* times the fatal toxin, in doses of 0.1 c.cm.; this is the highest test we made.

It has no deleterious effects upon these animals when injected into them in the dose of 1 c.cm. From these results, I should not feel that there would be any objection to again using the material.

(Signed) A. C. ABBOTT.

Unquestionably, then, the antitoxin was not the cause of this death. No post-mortem examination was made.

At the same time I wrote to a relative, Dr. Baer, of Berlin, through whom my own supply was obtained, and received an answer to the effect that "if a bottle should be turbid do not use it, but, as far as I know, it is always fresh and good."

CASE II. (Occurring in the practice of Dr. H. H. Freund.)—E. C., aged two years and two months, a male white child, of American birth, suffered from laryngeal diphtheria, complicated with laryngeal, tonsillar, and glandular infection. I intubated at 11 A.M., March 4, 1895. The child died at 8 P.M., March 5, 1895, thirty-one hours after intubation. This child received in one injection 10 c.cm. of Behring's No. 2 (1000 normals) antitoxin. A brief summary of this case, furnished me by Dr. Freund, is as follows: At the time of intubation the temperature was 101.8°, the pulse-rate 148, the respirations 44. An improvement followed at 8 P.M., when the temperature was 101°, the pulse and respiration still remaining high; on the following day the temperature rose to 102°, the pulse-rate to 180, the respirations to 60, and they so continued until death. No post-mortem was held. As the antitoxin was of my own importation, and had all the characteristics of the pure serum, and other bottles of the same number (op. No. 110) had been used with success, no examination of the material was made. The death was unquestionably not due to the antitoxin.

Previously to using the antitoxin in Dr. Owen's case I had used the antitoxin in ten cases of laryngeal diphtheria—his case was the 11th—all of which recovered—four with intubation. The question naturally arises, To what may be due the failure of antitoxin in these cases? Other cases of the same type, treated before and since by my friends, Drs. Freund, Wolff, and others, and in which intubation was practised, and but one injection of serum was administered, recovered. Why then should a fatal result happen here, in which precisely the same methods were pursued as in the successful cases? In the failure recorded in Brooklyn I think death was more in the nature of a coincidence than that the injection was the cause. In the cases just recorded no such explanation can be given. The treatment of our cases was by the antitoxin-treatment, by which I mean that no other remedy had been used. Such was the treatment in Dr. Owen's case, and such in the other cases followed by recovery.

The only conclusion that I have come to is this: Whilst the administration of the antitoxin was correct, and the intubation was correct, the further treatment of the cases lacked—what is now understood and now written by the first observers—a continuance of the same method of treatment. In other words, when elevation of temperature, pulse-rate, and respiration is found to continue after the administration of a suitable dose of antitoxin, the fact would appear to be an indication that the toxins in the individual have not been neutralized, and an immediate and larger supply of the serum is called for. For example, after administering an injection of No. 2 Behring's serum, and four hours afterward the disease progresses and the temperature rises instead of falls, we should administer at once another bottle of No. 2 or 3, and so continue until a reaction and correct fall take place, so well described by Kossel, Ehrlich, and others. I have pursued this method since, and have no further failure to record.

517 Pine St.

CASTRATION FOR THE CURE OF ENLARGED PROSTATE.

By RICHMOND SPENCER, M.D.,
OF BRANDON, MANITOBA;
ATTENDING PHYSICIAN BRANDON GENERAL HOSPITAL; VICE PRESIDENT WESTERN MANITOBA MEDICAL ASSOCIATION; AND LATE VICE-PRESIDENT CANADIAN MEDICAL ASSOCIATION.

As castration for enlargement of the prostate now attracts much interest throughout the medical world, I send, for the information of those interested in the subject, some notes of a case in which I have just operated. Should this operation prove to be the success which it now promises to be, it will indeed be a blessing to tide over much misery incidental to advanced life. My patient was a most unpromising one, as his history will show. Nevertheless I am pleased to say that the prospects for his ultimate recovery are favorable. The prostatic trouble has certainly been much, if not altogether, relieved, and I trust that with generous support and treatment, with the aid, perhaps, of electricity, the muscular weakness from which he now suffers will be replaced by a condition usually enjoyed by men of his age.

S. M., aged sixty-four years, was admitted to the wards of the Brandon Hospital, December 6, 1894, suffering from what he supposed to be muscular rheumatism. He had been ill for three or four months, most of the time in bed, and was under a physician's care. He had suffered from urinary trouble anterior to this for several months, and had at times used a flexible catheter to draw off his urine. The man was helplessly weak and extremely emaciated.

Upon admission to the hospital I gathered the following history: There was frequency of micturition, and he was unable to rest at night in consequence; the urine was slow in coming and had no force. There was retention of urine occasionally, and sometimes he was obliged to use a catheter. He had two or three hemorrhages from the bladder (one lasting over two days). Pain in the loins and tenderness over these regions were very great; he was unable to sleep at night in consequence of so much pain in the back; his appetite was gone, his tongue dry and brown. His health was completely broken down, and he was semi-delirious at times, and emaciation was so extreme that he would make an excellent specimen of a living skeleton. Shortly after his admission there was paresis of the left leg. The temperature was about normal, sometimes a little higher than normal. The urine was intensely alkaline, decomposed, and most offensive, owing to the cystitis that existed. Feces and urine were generally passed involuntarily. Upon introducing a silver catheter, the point deviated to the right when passing through the prostatic urethra. The catheter entered deeply into the bladder and moved freely about, showing that its walls were inactive. The bladder was washed out almost daily with a solution of 1 : 5000 mercuric chlorid, and immediately afterward with a solution of boric acid. This greatly modified the character of the urine, which was often neutral to test-paper and much less offensive. On December 15th, while in the act of drawing off his urine, the flexible catheter which he was using broke, leaving about six inches within the bladder. On December 23d, the bowels of the patient were emptied by rectal injection, and the patient put under chloroform, and, in consultation with my colleagues of the hospital staff, proceeded to examine him by the rectum. The prostate was enlarged both laterally and in its other diameters, being about the size of a medium-sized orange upon its rectal surface; its left lobe was larger and harder than the rest of the organ. Operation for extraction of the catheter was now proceeded with, and median cystotomy (or more properly, perhaps, urethrotomy) was performed. There was no difficulty in dilating the prostatic portion of the urethra, and the broken catheter was grasped and removed without any trouble. The wound was sutured and dressed, and a drainage-tube left in the opening for several days. The patient made a good recovery. Efforts were now made to recuperate the general health of the patient. The bladder was washed out daily with an antiseptic solution and good nourishment was ordered and partaken of by the patient, with a view of performing castration when his health would permit and his consent should be obtained. I explained the operation to him, and after some delay he consented to have it done. On March 30th last the patient was placed under chloroform, and with the assistance of my colleagues, castration of both testicles was performed. The patient, considering his general ill condition, bore the operation well and made a good recovery. The urine, which was now alkaline in spite of irrigation, was tested with litmus-paper every day, and on April 10th was neutral. On April 21st the urine became acid, and since this date I have omitted washing out the bladder for two consecutive days with the result of obtaining an acid urine, and on the 29th of April, after three consecutive days of omission, I tested the urine and found it decidedly acid. The patient is now slowly recovering his health. He has incontinence of urine, but this I attribute to paresis of the sphincter muscles of the urethra. His leg, which was partially palsied, is slowly recovering its use, and with its restoration I hope the sphincters of the urethra will resume their former tonicity. The muscular bladder has decidedly improved, and the catheter can now only be passed a short distance within the organ, as the walls contract firmly upon it. As there was to be a meeting of the Western Manitoba Medical Association on the afternoon of April 30th, in conjunction with my medical associates I examined the condition of the prostate, and, I am pleased to state, with very gratifying results. The gland is reduced one-half its abnormal size, and is nearly normal. The left lobe, which was the larger, is now the smaller of the two, and its contour can be felt by the finger. Before the operation the outlines of either lobe laterally were not able to be made out. The organ is also softer.

Considering the condition of the subject of this operation, I am well pleased with the result, as the man could not possibly have lived more than a short time without bladder-irrigation. The pain and tenderness from which he suffered so much in his back have completely left him, and he sleeps now without difficulty or the aid of opiates. On Sunday last he was carried down to attend a religious service which was being conducted in the operating-room of the hospital. I omitted to mention, in connection with his history, that calcareous degeneration of the arteries of this patient was most marked. The arteries were nearly as hard as though they had been injected for use in the dissecting-room.

TREATMENT OF LOSS OF SEXUAL POWER BY LIGATION OF VEINS.

By HENRY I. RAYMOND, M.D.,
ASSISTANT SURGEON U. S. ARMY, FORT WASHAKIE, WYOMING.

Under the heading here given Alfred King, M.D., Surgeon to the Maine General Hospital, reported to the *Boston Medical and Surgical Journal* of July 13, 1893, a case of radical cure of impotence in the male by ligation of the superficial veins of the penis.

With his succinct statement of fact before me, coupled with the knowledge that some sexual perverts resort to the expedient of placing an elastic band about the scrotum and root of the penis to effect or maintain an erection of that organ, I determined to essay a cure of total loss of the power of erection in the case reported herewith by the rational and simple surgical procedure of ligation of two of the efferent blood-channels, that, having become tortuous and dilated and being placed anatomically beyond the control of constricting muscular fibers (in contra-distinction to those veins that pass beneath the pubic arch), allowed a too great leakage or ready return of the venous blood from the trabecular spaces of the corpora cavernosa.

The history of the case prior to operation is as follows: The man was forty-nine years old, had been married for twenty-two years; disclaimed any sexual abuse; was a periodic drinker up to seven years ago, since which time he has been strictly temperate; he smokes excessively, is comfortably situated, and is engaged busily in clerical and administrative work. He is not strongly passionate, and has never had children.

About one year ago he noticed a waning of his sexual powers; while the desire was still felt the power of erection was gradually lost, until within three months of the onset of the disability, total inability to perform the sexual act resulted. About this time his wife went on a visit, and, though absolute continence was enforced upon him for three months, his dispassionate conduct toward her upon her return excited in her mind a suspicion of apathy or estrangement of affection on the part of her husband. Six months later he laid his case before me, and for nearly two months most faithfully carried out my instructions under treatment directed toward stimulation of the genital center in the cord and a better general nutrition of the body. Continence, physical exercise, cold ablutions, electricity, gold chlorid, cannabis indica, cantharides, turpentine, hypodermic injections of atropin and strychnin (the latter up to $\frac{1}{8}$ grain), and other aphrodisiac remedies were prescribed or enjoined, and to my personal knowledge were faithfully carried out, but without an iota of benefit to the sexual functions.

On March 20, 1895, I operated under strict asepsis by the following method: An incision was made about two inches long in or near the linea alba, immediately above the pubes, through the skin and superficial fascia. An elastic band was then thrown around the scrotum and root of the penis and tightened over the pubes as high up as possible. This caused distention of the lateral superficial veins of the penis, which could be readily traced along the lateral aspect of the skin upward into the depth of the wound. One vein on either side was then secured, ligated in two places, and cut between. The wound was then closed, but, owing to subsequent erections of the penis, a stitch or two were torn out and primary union interfered with. The patient was not confined to bed, but went about his usual avocation.

He reported later that he experienced a partial erection on the first night, fourteen hours after operation. On the second night he had two powerful erections, which forced him out of bed upon his feet upon the cold floor to prevent painful tearing of the wound. He has since had abundant erections, with desire, and he expresses himself (one month after the operation) as feeling brighter and lighter, with more zeal and ability to perform his daily routine of work, and with perfect assurance of his virile powers. It will be seen that in cases of impotence, when the vascular system is at fault, this simple operation of ligation of veins is rational, expedient, and immediately effective.

A SUGGESTION FOR A NEW METHOD OF DIAGNOSIS IN ESOPHAGEAL DISEASE.

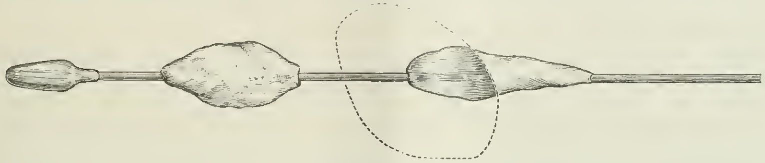
By BAYARD HOLMES, M.D.,
PROFESSOR OF SURGERY IN THE COLLEGE OF PHYSICIANS AND SURGEONS OF CHICAGO.

There are times when one has consecutively a number of cases of a rare kind. This has been my experience lately in diseases of and accidents to the esophagus. In two of these cases a novel method of examination was used with advantage.

In the first case a difficulty in swallowing had grown gradually worse for two years, in spite of the occasional use of sounds and bougies, until, when first observed by me, the young man could swallow liquids only with the greatest slowness.

The history gave no aid to diagnosis. The obstruction was certainly not a stricture, because a large olive sound could be passed into the stomach and then drawn out again, meeting the same difficulty at about the same place. Auscultation added nothing to the knowledge of the case. The electric-lamp bougie gave no information. At length several samples of dentist's wax were secured, and one sample placed on the whalebone handle of the esophageal sound an inch from the olive-shaped bulb. This was accomplished by warming the dental wax over a lamp. When moulded to a spheroidal shape it was passed into the esophagus and beyond the tumor while still warm and soft, and then drawn quickly out again. When it was first tried it came out flat and the shape of a butterfly. The next time the same wax was used a little cooler. It came out again much flattened, but apparently more flattened on the left side of the neck than on the right. Other experiments showed this condition more markedly. Thinking that the upper and unobstructed part of the esophagus might be the cause of the flattening, *two* spheroidal masses of wax were put one a little above the other on the handle of the sound and raised to the same temperature by immersion in hot water. In this condition the olive bulb of the sound was passed beyond the obstruction, then the first spheroid of wax was passed through the obstruction and the sound withdrawn. The flattening of the first spheroid was the same as when it stood alone. The second spheroid suffered only a slight change of form.

In trying this experiment the second spheroid of wax was on one occasion pressed firmly against this obstruction, but it was not allowed to pass beyond it. When it was removed it was found to have taken the impression of the upper border of the obstruction, as shown in the accompanying cut. From the appearance of these impressions a diagnosis was made of obstruction from a somewhat spherical or obspheroid body outside and in front of the esophagus and resting rather more to the left than to the right of the spine. Operation afterward demonstrated the reliability of the information thus obtained.



Impression of a wandering thyroid situated between the trachea and the esophagus upon two masses of wax on the esophageal sound. The dotted line shows the size and shape of the tumor. The lower mass of wax is not represented as sufficiently thin. The whole figure is about one-half natural size.

The second case in which this method was found useful was in dysphagia coming on in the course of a few weeks in a woman about forty-five years old. The patient insisted that she had not swallowed a bone or other object, but that her first difficulty began with an attempt to eat vegetable soup and bread. This appeared, by all the ordinary methods of diagnosis, to be a stricture. The esophagus was practically impermeable. On the end of a small olive bougie a mass of wax was placed in the form of a blunt cone. This was warmed and passed into the esophagus and pressed firmly but cautiously against the obstruction. When withdrawn, a distinct impression apparently of a broken end of a bone half an inch wide was plainly to be made out. This impression indicated also that the foreign body was in the right side of the esophagus; that it lay with its edges nearly right and left, the top tipped forward, and the left edge a little further backward than the right. The upper end of the long axis of the foreign body seemed to be inclined from the axis of the esophagus forward and to the left. These two cases illustrate the possibilities of another method of diagnosis. Wax may thus be used which is soft at 120°, and becomes hard at a temperature near 98.6°.

MEDICAL PROGRESS.

Microcephalus Successfully Treated by Linear Craniectomy.—Ord and Cotterell (*Medical Press and Circular*, April 10, 1895, p. 375) have reported the case of a girl, nineteen months old, born at term without difficulty, who at the age of thirteen months had influenza and inflammation of the tonsils, followed by gastric fever. Three months later she was suddenly seized with convulsions, which, so far as could be made out, were general, but marked by an extreme degree of opisthotonos; it was said that sixty convulsions had occurred within five days. Thereafter the child began to waste, and its health became variable. The mother thought the child was losing power in its limbs, and that its eyesight was failing. It was quite unable to maintain a sitting posture for any length of time, quickly tumbling over in any direction. The face was disproportionately large as compared with the cranium. There was no trace whatever of fontanel, which it was said was not present within a few days of birth. The child was dull and apathetic. Her attention was attracted by loud sounds, but she apparently did not see, although she appeared conscious of the presence of bright and luminous objects. She was unable to feed herself. No abnormality was found in the ocular media, and there was no paralysis. The knee-jerks were slightly exaggerated. As the child seemed to be losing ground and the symptoms pointed to the possibility of increased intra-cranial pressure, the right parietal bone was trephined rather above its center, and with cutting-forceps a channel of bone about one-and-a-half inches long and one-half inch broad in a forward direction was removed. The temperature rose on the following day, but soon declined. Two weeks later the wound was reopened, and a similar strip of bone about two-and-a-half inches long in a backward direction was removed, starting from the trephine-opening. Within a few days the child began to take notice of its surroundings, and seemed to gain power in the muscles of the back. After the lapse of twelve days and three weeks, respectively, the two operations were repeated upon the left side. The improvement was now more pronounced, the child soon sat up and played with her toys, and evinced a desire to stand supported. Thereafter, for a period of fifteen months, the change for the better was continuous, and the child progressed in the same degree as other children.

Sudden Death from Rupture of Varicose Veins of the Esophagus.—Notthafft (*Münchener medicinische Wochenschrift*, 1895, No. 15, p. 350) has reported the case of a man, eighty-four years old, who died suddenly with symptoms suggesting internal hemorrhage. It was learned that several weeks previously the patient had for several days had a febrile attack, associated with somnolence. For a long time there had existed stenosis of the esophagus, causing difficulty in swallowing, of varying intensity and demonstrable by means of the sound.

Upon post-mortem examination the heart was found heavily laden with fat, in places displacing the myocardium. There were, besides, evidences of fibroid degeneration and turbidity of the endocardium. The valves were somewhat thickened, but competent. The ascending aorta was slightly dilated, and the whole of the aorta and both iliac arteries were the seat of extensive atheromatous changes. The esophagus, two fingers' breadth below the bifurcation of the trachea, contained a tumor about as large as a walnut, and apparently involving all of its layers. The tumor was firm and hard, of medullary appearance, and ulcerated upon its surface. The esophageal veins were varicose. At the lower extremity of the esophagus close to the cardia was a varix containing coagulated blood, and by its side a ruptured vein; both were calcareous.

The stomach and intestines contained both liquid and coagulated blood. The liver was in a state of cirrhosis. Between the under surface of the left lobe and the anterior wall of the stomach was an abscess about as large as a hen's egg, containing greenish-yellow pus and a thick pyogenic membrane. The kidneys were in a state of moderate interstitial change. The left occipital lobe was the seat of softening about as large as a pigeon's egg. An examination of the esophageal tumor showed it to be a spindle-celled sarcoma.

A New Procedure for Studying Tubercle-bacilli in Sputum.—SPENGLER (*Deutsche medicinische Wochenschrift*, 1895, No. 15, p. 244) recommends the following procedure for the detection of tubercle-bacilli in sputum: To the sputum in a beaker are added an equal quantity of lukewarm water alkalinized with sodium hydroxid and from 1.5 to 15 grains of powdered pancreatin. The mixture is well shaken, and from 1.5 to 15 grains of crystallized carbolic acid added, and the whole is placed for three hours in the thermostat. When a sediment has formed, the supernatant fluid is decanted and the examination is made. If the sediment is excessive, water is added, alkaline, if necessary, and the mixture stirred and digestion permitted to proceed. In the course of a few hours a small sediment will have formed, which is again washed and then centrifugated or dried upon filtered paper. In the case of pure cultures of tubercle-bacilli it has been found that protracted digestion results in no harm, but in the case of sputum it is desirable that this be not too long continued.

The Relation of Chlorosis to Developmental Disturbances.—STIEDA (*Zeitschrift für Geburtshülfe und Gynäkologie*, Band xxxii, Heft 1, p. 60) has found, as the result of a clinical investigation, that genuine chlorosis, not ascribable to external injurious influences or to some primary disease, represents in reality a disturbance of development comparable to other developmental derangements or degenerative stigmata. It is frequently associated with these, and particularly with the juvenile type of pelvis and infantile genitalia of greater or less degree, and stands for the expression of a general injurious influence exerted upon the organism at an early period in its development, or even upon the germ, together with other developmental disturbances, and not in any way dependent upon these.

The Chemic Pathology of Typhoid Fever.—FENWICK and BOKENHAM (*British Medical Journal*, No. 1789, p. 801) have succeeded in extracting from the spleen after death from typhoid fever during the third week of the disease three varieties of chemic substances—albumoses, alkaloids, and fatty bodies. The injection of the albuminous extract into lower animals caused an elevation of the temperature of the body lasting for about thirty hours, and associated with anorexia and emaciation. Under ordinary circumstances a fatal result did not follow, and no pathologic changes of importance were detected in the tissues. The administration of the alkaloidal and fatty extracts was unattended with any pathologic results.

THERAPEUTIC NOTES.

The Treatment of Ozena.—MACKENZIE (*British Medical Journal*, No. 1791, p. 918) has reported the case of a young lady with a fetid discharge from the nose. The teeth were found sound, but it was recognized that ozena was present; large putrid crusts blocked the nares, and when removed were replaced by others. The nose was broadened and the alæ were thickened and reddened. In the belief that ozena is a disease of the mucous membrane, and that the atrophy or shrinkage which is characteristic of it is simply due to the presence of the hardened pus (crusts) upon that membrane, a condition somewhat analogous to that met with in the skin in certain forms of eczema, an attempt was made by curettement to supplant the diseased membrane by new tissue. After curetting, oily applications, such as a mixture of ichthyol and olive-oil, were found soothing and beneficial. The treatment was continued during the summer and part of the autumn, and resulted in recovery, which was persistent after four years. Similar treatment has likewise prove successful in several other instances.

Saline Infusion for Cardiac Paralysis from Chloroform-inhalation.—REIN (*Centralblatt für Chirurgie*, 1895, No. 17, p. 409) in a brief note relates that for a number of years infusion of a saline solution has been employed in Russia, and particularly in Moscow, for cardiac paralysis developing in the course of chloroform-inhalation. Observations upon animals have shown that the fall of blood-pressure due to inhalation of chloroform disappears after the injection of a saline solution, and when the heart had not completely ceased to beat the animal could be saved. Under the latter condition, and even when respiration had begun to fail, it was sometimes possible to resuscitate the animals.

Calcium Sulphid as a Prophylactic for Influenza.—GREEN (*British Medical Journal*, No. 1792, p. 974) reports the successful employment of a daily dose of one grain of calcium sulphid in the prophylaxis of influenza. He found that it takes about three days before the system becomes sufficiently saturated with the drug to prevent infection, so that it is rarely of use to those who have already been exposed, although, even then, it appears to modify the attack. When the attack has developed, it is believed that a daily dose of five grains of quinin is more rapid and safer in action, although it is well to use calcium sulphid in conjunction.

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BRITISH MEDICAL TITLES.

WE have recently (THE MEDICAL NEWS, February 16, 1895) explained at some length exactly who is warranted by law or by accepted custom in Great Britain to prefix the title, "Dr.," to his name, and this information would not come amiss to many of our British *confrères*, if we may judge from the frequent correspondence in the columns of English medical journals, and especially in those of *The Lancet*, wherein our contemporary is constantly required to set aright members of the British medical profession on this very point. We now propose to explain in detail the exact bearing of the numerous affixes that the British medical man appends to his name in place of the generic prefix, "Dr."

Of M.D. and M.B. we need say but little more. They are the titles which give a man the right to be addressed as "Dr.," and were fully explained in our previous article. It is usual among the holders of these degrees to add, for different reasons, the letters signifying the particular university that granted the degree. Those who hold their degrees from Oxford, Cambridge, or London are sure to let the world know whence they obtained their honors, because of the social prestige of the former two schools and the scientific prestige of the last. And for reasons of modesty, so that they should not be confused with the holders of these coveted degrees, or from reasons of patriotism, the medical graduates of other universities are in the habit of signifying the origin of their degrees also.

M.D. Oxon., M.D. Cantab., M.D. Lond., M.D. Dunelm., M.D. Vict., are the five English medical degrees standing respectively for the doctorates of medicine in the Universities of Oxford, Cambridge, London, Durham, and Victoria. Of the first three we need say nothing, but the latter two are not well known out of Great Britain. The University of Durham is a small but ancient seat of learning, with a very large medical school situated in the neighboring city of Newcastle-on-Tyne. The degree is one that is much taken by London students, as well as by the students of the Newcastle school, for the standard is not so high as the standard of London University, while only one year of residence at Newcastle is compulsory, and Oxford and Cambridge require three, if not four, years of residence at least from their graduates. Victoria University is the big provincial University of England and bids fair to grow bigger. Its colleges are Owens College, Manchester; University College, Liverpool; and Yorkshire College, Leeds. Its degree is by no means easy of attainment, but the number of local students in these great cities who continue to graduate yearly as M.D. Vict. is becoming very considerable.

M.D. Edin., M.D. Glasg., M.D. Aberd., and M.D. St. And., are the four Scotch medical degrees standing respectively for the doctorates of medicine in the Universities of Edinburgh, Glasgow, Aberdeen, and St. Andrews. Of the first three we need say nothing; they are the usual degrees to which the capable Scot aspires, and are reasonably hard of attainment. The degree of M.D. St. And. has peculiarities. It is not only to be obtained by examination, but it can also be conferred by the University after the minimum of examination upon non-resident gentlemen who are registered physicians and not less than forty years of age. Here it will be seen is an admirable opportunity for abuse, but we hasten to add that the University has earned nothing but credit by the way that it has used its privilege.

M.D. Dubl., or M.D. T.C.D., and M.D. R.U.I. are the two Irish medical degrees, standing respectively for the doctorates of medicine in Trinity College, Dublin, and the Royal University of Ireland. They are both excellent degrees, decidedly higher in standard than the medical degrees of the Scotch universities from the book-learning aspect, and probably as high in practical value.

Corresponding with all these M.D. degrees are M.B. degrees, every doctor of medicine having to pass a certain probationary period as a bachelor of medicine. The various universities also grant a surgical degree, and this is a little variously lettered. Generally the affix is B.C. (*Baccalaureus Chirurgiæ*), but it is variously written B.Ch., B.S., and Ch.B. by the bachelors of surgery of the different universities. Oxford uses B.Ch., Cambridge B.C., but occasionally B.S., Durham B.S., Edinburgh B.Ch., and the rest all use B.C. This B.C. degree is in each case the stepping-stone to the corresponding degree of Master of Surgery, written indifferently M.Ch. and M.S. These degrees are common to all the universities, and the same reasons that lead to the distinctive letters of the particular university granting the degree being appended to the M.D. prevail in the case of the M.S.

Before leaving the universities, to discuss the diplomas of the various degree-granting corporations of the United Kingdom, we should briefly mention one or two peculiar degrees, as their presence after a colleague's name is not very infrequent. Cambridge University grants a degree in public health, which is written thus: D.P.H. Cantab. London University gives a full doctorate in the same subject, which is written thus: M.D. (State Medicine). The Royal University of Ireland grants the degrees of B.A.O. R.U.I. and M.A.O. R.U.I., meaning respectively Bachelor and Master in the Art of Obstetrics. These practically exhaust the university medical degrees.

The other medical bodies in the United Kingdom which grant diplomas—as distinguished from degrees, which term is reserved for university qualifications—are: The Conjoint Board in England of the Royal College of Physicians, London, and the Royal College of Surgeons, England; the Royal College of Surgeons and Physicians of Edinburgh; the Faculty of Physicians and Surgeons of Glasgow; the Royal College of Physicians and Royal College of Surgeons in Ireland; the Society of Apothecaries of London, and the Royal College of Surgeons in Ireland and the Apothecaries' Hall of Ireland. It will be seen that these bodies run in pairs, with the single exception of the Society of Apothecaries of London, and the reason of this is that the General Council of Medical Education and Registration of the United Kingdom wish no longer to place on the Register—the official roll of the profession in the United Kingdom—the name of the bearer of only a single diploma. Every registered practising physician in England holds a diploma in medicine and midwifery as well as in surgery, and the corporations granting the diplomas have arranged themselves naturally in pairs to meet the demands of the General Council. The Society of Apothecaries is the sole exception to this rule, the holders of its diploma being considered doubly qualified men, and, as such, being entitled to compete for state or government appointments and commissions in the services.

The following is a list of the usual abbreviations into letters that designate the possession of the different diplomas, when added to the medical practitioner's name:

M.R.C.S. Eng., F.R.C.S. Eng., mean respectively member and fellow of the Royal College of Surgeons of England. The latter diploma is the highest surgical qualification in the United Kingdom, and can only be attained by the satisfactory passing of a very severe course of examination. It is the diploma held by all the surgeons on the honorary staffs of the metropolitan hospitals.

L.R.C.P. Lond., M.R.C.P. Lond., and F.R.C.P. Lond., mean respectively licentiate, member, and fellow of the Royal College of Physicians of London. The licentiate is the pass-diploma, and, held in conjunction with the pass-diploma of the Royal College of Surgeons of England, constitutes the usual double qualification of the English medical man. The membership is attainable by passing a higher examination, and binds its possessor to practise pure medicine only and not to be in general practice or in partnership. The fellowship is granted by the college to distinguished members—it is a purely honorary distinction.

L.R.C.S. Edin., F.R.C.S. Edin., mean respectively licentiate and fellow of the Royal College of Surgeons of Edinburgh. The L.R.C.S is the usual pass-diploma, the F.R.C.S. the honor-qualification. It is a ridiculously easy distinction to obtain in comparison with the F.R.C.S. Eng., but it is a good diploma.

L.R.C.P. Edin., M.R.C.P. Edin., F.R.C.P. Edin., mean respectively licentiate, member, and fellow of the Royal College of Physicians of Edinburgh, and are exactly analogous to the three similarly lettered London diplomas, have the same meaning and the same restrictions and distinctions.

L.F.P.S. Glasg. means licentiate of the Faculty of the Physicians and Surgeons of Glasgow. The diploma of the faculty is usually held in conjunction with the diplomas of the two Royal Colleges of Edinburgh, the three bodies having made arrangements by which after one series of examinations the students may obtain the diplomas of the three bodies. The single licence of L.F.P.S. Glasg. is granted only to candidates who possess already another and opposite qualification in medicine or surgery, as the case may be.

L.R.C.P. Irel., or L.K.Q.C.P. Irel., M.R.C.P. Irel., and F.R.C.P. Irel., mean respectively licentiate, member, and fellow of the Royal College of Physicians in Ireland. The substitution of K.Q. for R. in the designation of the licentiate by letters is very usually made. It signifies "Kings and Queens" College instead of "Royal" College, and the diplomas are classified in the manner described under the head of the London College of Physicians.

L.R.C.S. Irel. and F.R.C.S. Irel. mean licentiate and fellow of the Royal College of Surgeons in Ireland, the former being the pass and the latter the honor examination.

L.A.H. Dub. means licentiate of Apothecaries' Hall, of Ireland, and, in contradistinction to the diploma of the London Apothecaries' Hall, is not in itself a double qualification, entitling its possessor to registration as a medical man.

The usual qualifications of the Irish medical man not holding a university degree are either L.R.C.S. Irel., L.K.Q.C.P. Irel., or L.R.C.S. Irel., L.A.H. Dub., the two medical corporations each holding an examination in conjunction with the surgical.

L.S.A. Lond. means licentiate of the Society of Apothecaries of London, and is one of the oldest diplomas in the United Kingdom, and the only one conferring upon its holder the right to consider himself doubly qualified.

This concludes an elucidation of British medical titles, and when our readers see the multiplicity of designations under which the physician in the old country can be working he will understand that the subject is one that requires elucidation, if we, in our visits over there, desire to be properly posted in such matters. Many comments might be made upon a system of nomenclature for the profession that is so obviously open to the reproach of muddle and obscurity, but they would not all be fair. The old corporations cling naturally to the designations borne for years by the holders of their diplomas, and their sentimental right to do so is indubitable. But one thing must strike us as remarkable: Ireland and Scotland have universities that provide their medical students with degrees at an average price in fees, after examinations of average severity, so that it is open for the average student in those countries to graduate as M.D. and legally style himself "Dr." In England it is different. The mass of English medical students are educated in London, where the M.D. degree is more difficult of attainment than any medical degree in the world. They therefore content themselves with obtaining the diplomas of M.R.C.S. Eng., L.R.C.P. Lond., which give them no right to style themselves "Dr.," though to obtain those diplomas examinations as hard or harder than those instituted by the universities of Ireland and Scotland have to be passed. This is a hardship on the London student that we are surprised to find meets from year to year with no remedy.

EDITORIAL COMMENTS.

Has the State a Right to Demand Gratuitous Expert Medical Testimony?—Of interest to the medical profession is a case at present under litigation in Illinois. In January, 1895, a woman brought suit against the city of Springfield for injuries caused by a defective sidewalk. Dr. J. N. Dixon was called by the defence as an expert witness; it does not appear that he had any personal knowledge of the accident. He refused to answer a hypothetic question, put in the interest of the city, on the ground that he had asked a fee of ten dollars for his opinion, and that this had been expressly refused. For declining to serve gratuitously—with the exception of the nominal witness-fees—Judge Creighton, of the Circuit Court of Sangamon County, fined him $25. An appeal has been made, with the support of the Springfield Medical Club, whose members consider the affair as involving a point of law in which the entire profession is concerned. We quote at some length from the opinion expressed by Judge Creighton:

> "Of course, the court has no power to compel an expert to make an examination outside of court or to prepare himself to testify, but so far as the witness is able to respond to proper questions . . . without previously making special preparation, I think it is his duty to answer. Especially the court holds is that true of physicians. Physicians in this State are favored children of the State; a department of the State government is maintained very largely for their benefit. . . . They are so protected by the laws of the State and by public opinion and confidence that in five minutes of time a doctor may earn more than an ordinary laborer could earn in a day. . . . It is absolutely impracticable to

provide a system of expert fees for every class; the banker might claim that he could earn a hundred dollars a day, the merchant fifty, the ditch-digger might claim that he could earn ten dollars by digging in his ditch, and so on along the line. . . . The court can compel witnesses to come into court and answer, as far as they are able to do at the time, every proper question put to them."

With regard to the last statement, our profession is interested only as every citizen who may have some special—and, therefore, expert—knowledge is concerned. It is evident that the ends of justice cannot be reached unless the State has the power to compel the testimony of all who have direct, personal knowledge bearing on legal actions. It seems to us very questionable whether a man may be compelled to draw upon his capital of acquired knowledge in assisting the judge and jury to sift the testimony and arrive at conclusions. Whichever way this question may be decided, the medical profession cannot complain if it has to bear only its proportion of the burden. We believe that a court never calls a legal expert witness.

There is, however, one phase of this question in which either the medical or the legal profession would be involved as other avocations could scarcely be. Judge Creighton admits that the State has no authority to compel previous preparation for testimony by an expert, while he claims the right to make off-hand testimony obligatory. Such a ruling, if supported, would establish a dangerous precedent. The hypothetic question is acknowledged by lawyers to be a clumsy evasion of legal restrictions, and it is evident that its wording is so contrived on most occasions as to extract an answer that shall favor one side in a controversy, without reference to the ultimate truth of the matter. In many instances, an impromptu answer to such a question would be worse than useless for the purposes of justice, so that the necessary tendency of Judge Creighton's ruling would be either to elicit "expert" opinions which would be crude and partial or to compel a man for the sake of his own reputation, as well as his desire to testify conscientiously, to make such preparation as the Judge himself expressly declares to be beyond the power of the court to exact.

Judge Creighton maintains, however, that the medical profession is especially favored by the State, and that, in return, the State has a particular claim on physicians. We would be pleased to have the Judge mention a few of the favors that the State (using the word as referring either to the State of Illinois or to the General Government) confers upon physicians. Doctors are commonly excused from jury-duty—why? For their own convenience or that of their patients? They are relieved from some competition by a system of examination, licensing, and registration, and the Illinois State Board of Health is something for the whole country to be proud of; but the ultimate intention of such restriction of practice and the maintenance of this department of the State is so obviously for the benefit and protection of the people as a whole, that it is absurd to consider it as a favor to a class, especially as the process of the registration is at the expense of the candidates for licences. The State of Illinois goes rather further than most States in attempting to check the evil of itinerant quacks, and doubtless there are some ignorant citizens of the State who can see in this nothing but an attempt to assist the regular physicians; but a judge of a dignified court ought to be above such a misconception. As to the fact that a physician can earn more in five minutes than a laborer can earn in a day, the Judge should have recalled the old adage that the pot should not call the kettle black. The average judge, or, for that matter, the average practising lawyer, enjoys a greater income than the average physician, and legal fees are even less dependent upon expenditure of time than are those of the medical profession. We cannot pardon the implication that brain and brawn are to be repaid at the same rate, unless it comes from the lips of some one unable to appreciate what intellectual labor is. For a man protected in his professional career from unlicensed competition, by even greater legal barriers than have been erected about the medical profession, for a man whose professional duties are almost absolutely devoid of exposure to weather or of muscular effort, and whose recompense is greater than the average of men of the medical profession, for such a man to institute a comparison between the pay of the laborer and that of the physician, in the spirit of the remarks quoted, is the most brazen effrontery.

Antivaccination is a subject of perennial interest to a certain class of people and to the student of morbid psychology. As we write, we have before us one of many similar proofs of the craze that at one stroke gives charming evidence of that peculiar combination of popular madness, ignorance, and hypocrisy which forms the basis of the sentiment. It is in a sheet called *Dr. Foote's Health Monthly*. The first page is occupied with an illustration of the "Slaughter of the Innocents," two "Victims of Vaccination," children in their coffins, labelled "Mamie" and "Rose," whilst the parents in graceful poses weep at their heads. The reading-matter of this periodical of Dr. Foote is made up of abuse of compulsory vaccination and of the medical profession (why does Foote take pride in the term Doctor?), of a report of a meeting of the Eclectical Medical Society of the State of New York, of demands for "medical freedom," and of a nauseous mingling of pseudo-science and general raving. "Professor J. Rhodes Buchannan, of San Jose, Cal.," writes a scorching letter against the attempt to pass a "scandalous bill" in Texas as to medical practice, a bill supported by the "Allopathic, Homeopathic, and Eclectic parties," but which strangely left out "Professor" Buchannan's party of "reformers," "liberals," "independents," and "progressives."

"In California," says the Professor, "we are aiming at a fundamental reform to place the independent and progressive on a footing of entire equality with the members of the three sectarian divisions of the medical profession. We have formed a State Therapeutic Society, which aims to include all novel methods, as well as old knowledge, and to have its own Board with equal authority to those of the three existing parties. My own name has been honored as President of the State Society. Its success will imply the establishment of a liberal college which has been my ideal."

Other gems from the correspondence column are the following:

MEMPHIS, TENN., January 4, 1895.

DR. E. B. FOOTE,

DEAR SIR: John Davis, a resident of Memphis, Tenn., has carefully read your "Plain Home Talk" with full satisfaction. Used your Eye Sharpener twenty days and can read plain print without glasses, the first time for twenty years, and still improving.

Respectfully yours, John Davis.

Steelton, Pa., March 2, 1895.

Dr. E. B. Foote,

Dear Sir: I ordered of you sometime ago a box of your Magnetic Ointment, with directions for use during and previous to confinement, which I have received, and has proven a blessing to my wife. Having had it once in use I feel that I cannot afford to be without it in the house. Enclosed you will find a money order for a dollar box.

Yours respectfully, Fred. J. Repp.

In the advertising columns we find further proof of the animus of the Professor's struggles for "humanity" and "medical freedom." The Professor seems able to supply the "Murray Hill Publishing Company" with "copy" to an unlimited extent, and, a host in himself, to keep the presses busy. The prurient character of this literature is well illustrated by the

> "Dime series of pamphlets, consisting of "Physiological Marriage," "Physiological Improvement of Humanity," "The Perfect Good in Wedlock; or, the Way of God in Holy Marriage" (by a Christian minister), "Health in the Sunbeam; or, Blue Glass Cure," and "The Alphabet of the Human Temperaments." "Price, ten cents each."

Has any other profession or calling such vermin to exterminate?

A Suggestion to State Boards of Medical Examiners.—The bright response to a toast at the recent banquet of the Jefferson Alumni, by Professor William Thomson, contained much more sense than is usual in post-prandial oratory. Among other things Professor Thomson made the suggestion that our State Board of Medical Examiners should have a graded examination to correspond to—and to preserve—the graded courses of study of our colleges. Professor Thomson said:

"How shall our graded courses be preserved? Hereafter our men who have passed final examinations in anatomy, chemistry, and physiology at the end of their second year, will, after their graduation, appear before the State Examiners, having mercifully had two years to forget many of the technical details of these branches, together with most of those test-questions and catch-questions so dear to the hearts of the examiners. The terrors of examination were formerly for the students only, but hereafter those members of a Faculty who teach the fundamental branches may well dread the ordeal to which such students will be subjected and fear the criticism that may fall upon them as teachers. The remedy would be to have the State Board examine students in the fundamental branches after two years' study and pass them in these on proper evidence of fitness, leaving until after graduation their final examination for the certificate of the Board. Either this, or else to confine the State examination to the great practical branches, assuming that they contain enough fundamental knowledge to fit men who can pass in them to become good, practical physicians. The annual meeting of the American Medical Association in the division of its work into sections would guide us in the solution of this difficulty. Anatomy is classed with Surgery, Physiology with Dietetics, Diseases of Women with Obstetrics, while Chemistry is not even mentioned. The other sections are specialties."

First Aid to the Injured.—In referring to the good work of the Life-saving Society of London, in The Medical News of February 23, 1895, p. 220, we took occasion to state that we had no knowledge of the existence of branches of this organization, or of a similar organization in the United States. Our attention has since been called to the fact that there is in New York a society, which was organized in 1882 as a Committee of the State Charities Aid Association, and in 1883 as the Society for Instruction in First Aid to the Injured.

The object of the Society is to give instruction by means of lectures and practical demonstrations in the use of measures to be employed in cases of accident in the absence of a physician, and includes, among other things, the resuscitation of the apparently drowned. The objects of this and similiar organizations are in the highest degree laudable and should receive practical support and encouragement.

SOCIETY PROCEEDINGS.

AMERICAN MEDICAL ASSOCIATION.

Forty-sixth Annual Meeting, Held at Baltimore, Md., May 7, 8, 9, and 10, 1895.

(Special Report for The Medical News.)

Section on Diseases of Children.

First Day—May 7th.

Dr. Edward H. Small, of Pittsburg, delivered the

address of the chairman,

which dealt entirely with business matters relating to the section.

Dr. William B. Noyes, of New York, read a paper on

typhoid fever in infancy and childhood.

He referred to the prevailing uncertainty regarding the subject in the profession, some report having seen many cases, while others are skeptical of its occurrence in childhood. The reports of the New York Foundling Asylum, of the Nursery and Child's Hospital of New York, and of the Children's Hospital of Philadelphia are silent regarding it. In contrast, the London and many other European institutions have reported many cases. For instance, in London, in 1870 and 1871, 126 deaths from typhoid fever occurred in children under five years of age—18 per cent. of all cases.

The importance of being able to recognize the disease in individual cases is therefore evident. It is very liable to be overlooked and diagnosticated as malarial fever, broncho-pneumonia, etc. The pathologic lesions are those of the disease in adults. Peyer's patches become swollen earlier in children. On the whole, the changes are less pronounced than in adults, the course of the disease milder, and the mortality less. It has been shown that the pathologic conditions present when the disease has been artificially produced in animals resemble closely those found in children.

The diagnostic symptoms are, in general, the same as in adults. The fever is often slight, and the child plays about as if well. The pea-soup character of the stools, when present, may be unobserved, from the use of the diaper. Constipation is common, and when the bowels are moved the stools are very ill-smelling. Ordinarily there is an absence of acute intestinal symptoms. Tongue-symptoms are mild; sordes are rarely seen. The lenticular spots may occur early and late, and in two or more crops. Headache is shown by the child's rubbing or picking his nose, ears, and head, and burrowing his head into the pillow. Head-symptoms are not active, like those of meningitis. Bronchitis seems a symptom of the disease—the typhoid bacillus has been found in the bronchial secretions. Epistaxis is rare; angina may occur. The typhoid bacillus is not demonstrable in the stools until from the tenth to the twentieth day—the same is true in the case of adults. Its demonstration at all is difficult in any case, on account of the swarming of many varieties of bacteria in the stools.

The disease in children assumes three principal types: the abortive, the regular, and the malignant or prolonged. The first, according to many, is frequent. A large proportion of cases last but from eleven to twenty-one days, and still present all the characteristics of the regular type. Changes in Peyer's patches, similar to those of typhoid, have been observed in other conditions in children.

After ulceration is established the conditions tend to approach those of septicemia, and other bacteria prevail, while very few of typhoid are found late in the attack. Abortive cases possibly are those in which the Eberth bacillus is active, while in the protracted ones there is mixed infection.

A paper on the same subject was read by Dr. John E. Woodbridge, of Youngstown, O. He said that the causes and the disease are identical in children and adults, and that every case of typhoid fever may be aborted by proper treatment. As to what this is the speaker studiously refrained from stating definitely. Text-books hardly refer to the disease in early childhood, and the profession fails to realize its frequency. The great majority of cases of so-called brain-fever are typhoid fever; so are many of those of supposed meningitis and congestive fever, as has been demonstrated by autopsies. These errors demand correction in the interest of proper treatment. In children intestinal hemorrhage is rare. The treatment, in general, should be disinfection of the intestinal canal. Diarrhea is not a contraindication to flushing out the intestines by catharsis and injections. Antiseptic remedies should be administered, with copious draughts of fluids.

Dr. W. S. Thayer, of Baltimore, read a paper on

MALARIA IN CHILDREN IN RELATION TO MALARIAL PARASITES.

He recognized three varieties: Intermittent, remittent, and typho-malarial. During paroxysms of intermittent fever the parasites are found in great numbers in the blood. The paroxysm is due to the plasmodia, or to some poison unknown at present, set free by them. The differing paroxysmal period is supposed to be due to differences in the characters of the parasites. Generally regular types occur earlier in the season; as the autumn advances they become more irregular. The discovery in the blood of these parasites is the only positive means of diagnosis. They are the same in children as in adults.

Dr. Adolph Koenig read a paper on

GUAIACOL IN TYPHOID FEVER.

He contended that more cases of typhoid occur in adults than in infants, probably because of the greater exposure of adults to the germ through food and water. After ulceration of the intestines is established the treatment becomes surgical—that is, directed to disinfection and antisepsis. First, therefore, the intestines should be disinfected. Calomel in fractional doses, frequently repeated, is the best drug for this purpose. This treatment is *initiatory*. The regular treatment should be directed to keeping the intestinal canal antiseptic. For this purpose guaiacol is a feasible and efficient agent, and it, or something equivalent, should be continued throughout the attack. Cold sponging is best for antipyresis. Nothing causing depression should be employed. Guaiacol is not to be considered as a specific, but only as one of many feasible antiseptic agents.

Dr. Samuel Adams, of Baltimore, read a paper on

THE BRAND METHOD IN CHILDREN,

which he has employed in hospital practice since 1893. Subsequent statistics, as compared with those of former times, were the best evidence he could present of its efficacy. To secure adequate results the method must be applied in all its details as directed by its author. The baths should be personally supervised by a competent physician, and not left to the nurse. The bath must be taken to the child's bed, and not the child to a bath-room. A teaspoonful of whisky is first administered on the first day. The temperature of the bath should be between 70° and 80° F. On the next day it may be lower if it was well borne. A child's temperature should always be taken in the rectum to have it reliable. Besides reduction of temperature nervous symptoms are abated, sleep and comfort are induced, and delirium is dispelled.

Dr. William Osler, of Baltimore, said that typhoid fever in children is, as a rule, milder than in adults. It is prone to set in with cerebral symptoms in his experience.

Dr. Enoch Paine, of Boston, said that he had years ago observed ulceration of Peyer's patches in children in other diseases than typhoid fever. More recently autopsies have shown the same thing. Treatment should be our chief concern, but such wholesale statements as were made by Dr. Woodbridge are of questionable propriety, more like newspaper sensation than scientific work. The speaker preferred the trained nurse to the doctor in administering the Brand bath.

Dr. William Pepper, of Philadelphia, spoke of the difficulty of bacteriologic diagnosis in the presence of the many kinds of germs swarming in the intestines in typhoid fever. He commended that dogmatism should be avoided and liberality practised in treatment. No system should be pursued as an unvarying routine. Each case should be studied by itself, and measures best adapted to it applied. Brand's method is useful in a large number of cases, but is liable to improper application. But before the time arrived for its employment local measures of disinfection and diet are called for and might prevent the necessity of resorting to baths at all. Something to prevent systemic intoxication is the great desideratum.

Dr. J. A. Work, of Elkhart, Ind., said that elimination of poisonous material from the intestines is the first object of treatment to be sought. After this was accomplished antisepsis may be employed.

Dr. George N. Acker, of Washington, remarked that though Dr. Adams and he were on the same hospital staff he had become discouraged in the use of the Brand bath, largely because it depressed the patient. He prefers cold compresses and other mild applications of cold water.

Dr. Atkinson, of Baltimore, stated as his opinion that the failure to diagnosticate typhoid fever in children arose largely from the expectation that the disease runs only a typical course. When the profession comes to know it better, as it actually exists, there will be fewer errors committed. As to Brand's method, it should not be used to the exclusion of other rational measures. Its results should not be estimated alone by the fall of the temperature. The greatest benefit was apparent in general improvement, checking delirium, quieting nervous irritability, inducing sleep, etc.

Another speaker called attention to what he regarded as a grave omission in the discussion of treatment—the importance of stimulation. Another thought that bacteriologic examinations would be very unsatisfactory to rely upon for diagnosis if the typhoid germs could only be found, as admitted, in the stools until after from the tenth to the twentieth day.

Dr. Larrabee, of Louisville, Ky., said that after all our boasting we did not seem to have improved much on the treatment of fifty years ago—we have not much that is reliable to offer that was not then done as well. There was a characteristic countenance, hebetude, and headache, important, he thought, for diagnostic purposes, in children as well as in adults. The chief object of treatment should not be to make the patient comfortable, but to abort or modify the disease. Baths merely suppressed the temperature, which did not seem to him important. As to how actually to operate upon the disease itself he pleaded ignorance.

Another speaker remarked that we are without a specific yet; therefore, measures which experience has shown to be useful must be our only reliance, and should not be neglected.

Dr. S. Solis-Cohen, of Philadelphia, protested strongly against the habit of regarding Brand's method only as a means of reducing temperature. Its effects are principally of two kinds: It calms nervous excitement, controls delirium, induces sleep and general comfort; and, secondly, it increases cell-metabolism—experimentation has shown that urotoxic elimination is increased by cold baths. After the bath the patient must be put in a warm bed and given stimulants.

In rebuttal, Dr. Woodbridge said that he did not think he could be accused justly of neglect in not employing Brand's bath, when he got better results than any one reported from their use from other methods of treatment. He would venture to predict that the profession would adopt, if not his own, at least a similar method, universally, in the treatment of typhoid fever before five years had elapsed.

Dr. Adams said he did not mean to be understood that a physician should actually administer the Brand bath, but be present to supervise it. He also said that he was not aware of measures likely to accomplish intestinal disinfection in typhoid fever.

Second Day—May 8th.

Dr. Louis Fischer, of New York, read a paper on

ANTITOXIN IN DIPHTHERIA,

giving statistical results of his clinical experience, both in private and hospital practice, with the diphtheria-antitoxin. He related that previous to the introduction of the antitoxin his mortality, as nearly as he could estimate, was about 55 per cent. The mortality in over 200 cases reported by him in April last, in which the antitoxin had been used, was about 15 per cent.

In cases complicated with other diseases, like measles or scarlatina, the antitoxin does not give so good results as in uncomplicated ones. The use of inferior preparations has further led to confusion as to its real merits. The preparation of the German antitoxin is under the direction of the government, which assures uniform and reliable results. Cases were related and temperature-charts displayed to illustrate the effects of administering the remedy. A new syringe was also exhibited. The history of a malignant and complicated case was related in which intubation was combined with injections of the antitoxin. The case was so malignant that no one who saw it expected recovery, yet this did ensue. Remarkable results like this have been observed in other cases by the author, as well as by others, from the combination of the antitoxin and intubation. Dr. Fischer declared that his results had been vastly better with than without the antitoxin in treating diphtheria. Experiences in Berlin and Paris of leaving off its use after having employed it for a time and then later resuming it were referred to, the mortality dropping from more than 40 per cent. to about 12 per cent., and going up to the original figures again as soon as the remedy was stopped, and down again on its resumption. This was an answer to the plea made by some that the reduction of mortality was not due to the remedy, but to variations in the severity of the disease at different times. Dr. Fischer said he would not treat diphtheria without the antitoxin any more than he would intermittent fever without quinin or syphilis without mercury.

Dr. A. Campbell White, of New York, continued the consideration of the subject in a paper entitled

CLINICAL EXPERIENCE IN THE TREATMENT OF DIPHTHERIA WITH THE ANTITOXIN.

Of the experience of about a year with the antitoxin in this country only about six months is of any value, because of unreliable preparations. European experience has been very much larger than ours, which latter, in fact, is a mere repetition of theirs. With all the experience before us we certainly ought to be able to declare conclusively whether or not the antitoxin is of any value. We have the results of its testings on animals, which are all favorable to its curing diphtheria, and these results have been extensively corroborated by clinical experience. Some observers declare it of no benefit; others attribute the good results obtained to it alone. Difference of conditions, such as the use by some of inferior preparations and its use in complicated cases, have much to do in explaining the disagreement. The reader expressed no doubt as to the curative and specific action of the remedy.

He then related cases. The test, he said, was with the severe cases, not with mild ones, which will recover anyway. Its power to check or abort the disease is one of the most important effects it has shown. Marked results invariably followed its use in the early stage of the disease. He had observed marked relief of dysphagia when present, and rapid subsidence of swollen glands. Its effect on temperature is difficult to estimate, because this varies so much naturally in diphtheria. The effect on the pulse was good. Paralyses seemed to result less frequently, and are milder when they do occur. The effects on the kidneys are, if anything, to lessen renal complications. The remedy does not produce its effects instantly, but only after about twelve hours. No dangerous effect had been observed by the reader in his experience with the antitoxin.

Summarizing, Dr. White said: The antitoxin is a specific remedy for diphtheria; care must be taken to have a reliable preparation; if used with proper discrimination, it is not dangerous; it is important to have a good syringe perfectly disinfected.

Dr. Henry Koplik, of New York, read a paper on

LACUNAR DIPHTHERIA OF THE TONSIL.

He cited Trousseau's observation of cases of paralysis sometimes following non-membranous tonsillitis, and not regarded by him as truly diphtheric, and to the controversy between Fraenkel and Jacobi, the latter claiming that true diphtheria may exist without membrane, while the former denied this. The reader had observed cases, proved to be diphtheric by other members of the family contracting malignant diphtheria from them, in which no membrane was discoverable. There are two classes of these cases: One cannot be distinguished clinically from follicular tonsillitis. In the other there are symptoms like those of true diphtheria: great depression, septicemia, etc. From both cultures of diphtheria-bacilli may be made which are virulent. What should be done, therefore, with cases appearing to be simple follicular tonsillitis is an important question.

The author cited a case in which on the freshly cut surface of the stump, after tonsillotomy, diphtheria developed. He believed that the follicles of the tonsils were sometimes the virus of latent germs of diphtheria. In this case the fresh wound of the tonsil provided suitable soil for their development. The writer thinks it time the theory were exploded that diphtheria cannot be present unless there is also membrane. All cases of tonsillitis deserve to be isolated and watched.

Dr. Starling Loving, of Columbus, O., read a paper on

FALSE CROUP.

By this term he referred to the spasmodic and catarrhal varieties of croup, and mentioned the frequent embarrassment of the physician, in the presence of such cases, in making the diagnosis between false and true, or membranous croup. False croup is only exceptionally not recovered from. This fact tends to vitiate favorable statistics of mortality from true croup. Although it may prevail to a considerable extent at a given time, false croup is not truly contagious or communicable. It is very common, while true croup is rare. It is often preceded by coryza, and there is catarrh of the pharynx, larynx, and trachea. These symptoms precede true croup also, but are more severe, together with bronchitis and swelling and soreness of the cervical and submaxillary glands. If pharyngeal diphtheria be present, the diagnosis becomes easier. The dyspnea, as a rule, reaches its maximum in false croup during the first twenty-four hours. In true croup it grows progressively worse to the end. The same is largely true of other symptoms. True croup is frequently ushered in by a chill; the pulse and heart grow weaker with the progress of the disease; there is continued fever throughout, and the appetite fails. Emetics in false croup are often followed by complete and permanent relief of dyspnea, while in true croup they prove of very transient relief, if any, and ultimately do harm by augmenting the depression. The attack comes on quickly in false croup. This may be true of occasional cases of true croup, but not very often. If membrane can be seen, it, of course, settles the diagnosis, but when present it is often not easily seen. Death is a strong evidence of error in diagnosis when it occurs in a case of supposed false croup. One attack of false croup predisposes to others. The disease is likely to recur many times in the same patient. As to whether this be true or not of membranous croup there is as yet no agreement. The bacillus of diphtheria, when present, cannot always be found, but when found its presence is conclusive.

In the discussion that followed, Dr. J. P. C. Griffith, of Philadelphia, said that he thought that his fellow-practitioners save fewer cases of diphtheria than those of New York. Only sporadic cases are, as a rule, seen in Philadelphia. He had been, at first, skeptical regarding the antitoxin, especially in view of the failure of tuberculin; but now he admitted that he had reached that degree of confidence that were he to contract diphtheria he should insist on being treated with the antitoxin. In lacunar tonsillitis experience had taught him that isolation and watching of every case was the wisest course. Undoubtedly apparently simple cases proved sometimes to be diptheric.

Dr. W. M. Welch said that he had seen something like a hundred cases in his experience with the use of the antitoxin in diphtheria, and while he appreciated the desirability of a remedy such as this was purported to be, and, moreover, while from his limited experience he would not assume to condemn it as a failure, he yet remained skeptical. Other remedies had given him as good results as this. In answer to a question, he said he had used Behring's No. 2 for the most part. The mortality had been about 25 per cent. of one-hundred cases in which he had used the remedy.

Dr. J. A. Larrabee, of Louisville, Ky., called attention to a form of tonsillitis which doubtless arises from sewer or drain poison, and which is communicable, but is not true diphtheria. He would abolish such terms as false croup; names of diseases should be affirmative, not negative. Such terms are not scientific. Scientific names are truly descriptive of the thing named, not exclusive of what is not intended to be so named. He believed, with others present, that the great discrepancies of opinion regarding the value of the antitoxin, held by those who had had experience in using it, resulted from lack of uniformity of the preparations employed.

Dr. Ingals, of Chicago, remarked that many observations reported were valueless because the diagnosis had not been confirmed by laboratory proofs of the disease. It is well known that the rate of mortality from diphtheria is likely to vary, under ordinary conditions, during the same epidemic, all the way from 10 per cent. to 70 per cent. We may be on the right path, but this is not yet absolutely sure; it would, however, be a matter of neglect to refuse to employ the remedy.

Dr. Young, of Newark, related that he had good results in his practice without the antitoxin. He uses pilocarpin.

Another speaker, claiming large experience, said that he regarded all cases of tonsillitis with suspicion. He had been skeptical of the antitoxin, but one very malignant case, in which recovery ensued promptly after its use was begun, contrary to all expectation, had made a deep impression in its favor on him.

Dr. Fischer objected to the term experimentation being any longer applied in the case of the antitoxin. We are past that stage now. It should be borne in mind in using the antitoxin that many unreliable preparations are sold, and that reliable ones vary in strength. The remedy should be used in the most hopeless cases, unless actually moribund.

Dr. White, in rebuttal, said that he thought that actual experience with the antitoxin in severe cases was more convincing than any amount of statistics. It had been absolutely convincing to himself after much experience with and without the antitoxin in diphtheria. Before attributing a reduction of mortality to natural variations we should remember the experiences of foreign institutions, in which the effect of intermitting the use of the antitoxin had been observed. The speaker believes the throat may often contain latent germs of diphtheria. A simple inflammation provides a suitable soil for their development, and the simple is changed into the malignant organism.

Dr. Loring said that he believed he had seen cases of membranous croup, not diphtheric in the Klebs-Loeffler signification, and which were not communicable. He disliked the term false croup, but had to use such names as the profession supplied.

Election of Officers.—The following officers were elected for the ensuing year: *Chairman*, Dr. A .C. Cotton, Chicago; *Secretary*, Dr. J. A. Work, Elkhart, Ind.

In the absence of the author, Dr. Koplik read a paper on the

ETIOLOGY OF INFANTILE SUMMER DIARRHEA,

by Dr. Rosa Engelmann. It was pointed out that the local lesions and systemic effects observed in the disease are the results of the action of micro-organisms and of their toxic products acting locally or by absorption into the system. Thus is produced entero-colitis by the first, and by the second, pneumonia, meningitis, etc. Some investigators have pointed out that the disease remains localized while the germs are confined to the intestine, and grave systemic symptoms supervene only after germs have entered the circulation.

Dr. Edward Anderson, of Brockville, Ind., read a paper entitled

COLITIS IN INFANCY AND CHILDHOOD.

He pointed out that the disease prevails most in hot weather, because heat favors intestinal fermentation. This is more liable to occur in those of feeble resistance from impaired health, and is especially common in artificially fed infants. The intestines become blocked with accumulations of foul, undigested food. Constipation generally precedes an attack of the disease and affords the true clue for treatment. The accumulations are first to be removed by catharsis and copious injections. Mercury, as blue mass, is given for the former and warm water for the latter, administered until the symptoms abate.

Dr. Irving M. Snow, of Buffalo, N. Y., read a paper entitled

MEMBRANOUS ENTERITIS ASSOCIATED WITH ASCARIS LUMBRICOIDES.

He related a case in which membranous casts of the bowels were evacuated whole or in fragments, on repeated occasions, during several weeks. There was no pain or tenesmus, or other distressing symptoms. One day a lumbricoid worm was discharged. Santonin and calomel subsequently brought away several more on two occasions, after which the patient got well. Cases of membranous colitis are ordinarily attended with pain and accompanied with serious constitutional symptoms. A similar case has been reported by another observer in which fourteen days after the discharge of the casts lumbricoid worms were evacuated.

Dr. Stewart Patterson, of Pittsburg, read a paper on

MAGNESIUM SULPHATE IN THE TREATMENT OF DIARRHEA IN CHILDREN.

He maintained that the disease has been shown to be the result of germ-invasion of the intestinal canal and the mucous membrane. In the beginning there is an acid condition. The remedy under consideration counteracts this acidity and expels the contents of the intestinal canal. The author had found magnesium sulphate an effective remedy, but did not claim that it had any very special advantage over some other drugs. Its merit lies in its simplicity and its effectiveness.

Dr. Koplik said that meningitis and pneumonia and other systemic effects in summer diarrhea arise directly from contamination of the body-circulation with the disease-microbes. Mercury should be used with caution in inflammatory diarrheas, as it is liable to act on the kidneys and cause complete suppression of urine. The speaker preferred some less nauseous drug for expelling toxic accumulations from the intestines than magnesium sulphate. He said he used very little medicine of any kind, preferring to rely upon diet, even to the limits of starvation if necessary. White of egg and water and broths are his favorite articles of diet. He uses bismuth largely as medicine.

Dr. Booker, of Baltimore, believed that the bacteria weakened the cell-activity. We do not yet know what causes many of the various conditions. Hot weather is favorable to bacterial growths—germs thrive in milk. Then impaired vitality improves their opportunity. The systemic effects of the toxins of the intestine are similar to those produced by the infectious diseases, measles, etc. It is easy to follow the bacilli in the intestinal tissues, as they leave traces of suppuration. His own pathologic investigations have shown no uniformity of conditions, but mixed and varying infection. No two cases are ever alike. One class shows clinically more serious systemic conditions; in another class more pronounced local effects are apparent. In treatment diet is the first consideration. The particular food the child is taking should always be withdrawn. Calomel is the remedy *par excellence*, a triturate in fractional dosage, frequently repeated, until the desired effect is obtained—say grain one-sixth every hour. Much effect from drugs should not be expected in the way of disinfection—but accumulations should be promptly gotten rid of. After the attack has lasted for a week medicines cease to do much good. After this diet is to be relied upon. Bismuth is often disappointing. Irrigation is useful in some cases, but must be continuously used when intense inflammation exists. Irrigation should be practised with a soft catheter, with two or three quarts of water, which is allowed to flow back, *ad libitum*, outside the catheter.

DR. BIGGS declared his belief that other factors than the bacteriologic entered into the problem of causation. In treatment we should distinguish between conditions. Silver nitrate is his mainstay in cases of vomiting and watery stools, from gastro-enteritis, after removal of accumulations present. When the lower bowel is alone affected mercury, in small and repeated dosage, is the best drug.

Another speaker referred to the benefit of trips, even of a day, to the seashore or mountains. This would indicate the importance of heat as a cause—over and above bacteria. After a day or two of diarrhea there are no accumulations to be removed. Cathartics and irrigations are not indicated unless there are actual accumulations. Autopsies often fail to show anything, not even bateria to any extent, in the intestines. When systemic intoxication is marked opium is indicated.

Another speaker said that he had relied on calomel and hot water; and when pain was present, morphin and atropin.

DR. FISCHER said that the routine treatment in Germany for the disease, he found last summer, was irrigation of the stomach and bowels with warm salt-water, the fluid being made to enter as high up as possible. Whenever there was choleraic loss of tissue-fluid, hypodermic injections of the same solution were made.

DR. ADAMS said that he had found that much could be accomplished by removal from a heated to a cooler atmosphere. He narrated his experience with crowding hospital children into hot farm-houses in the suburbs. Half of the children died, although the diarrhea was not severe and the autopsies showed no extensive lesions. On the other hand, he had witnessed remarkable cures from sending almost moribund children to the mountains or seashore in hot weather.

DR. ANDERSON said he regretted that all patients could not be sent to cool climates. Most of them had to be treated where they lived. He thought magnesium sulphate an impossible remedy in cases of severe vomiting. Gray powder he thought the best drug in such cases.

DR. PATTERSON said he did not intend to imply that magnesium sulphate had any specific action. He was not advocating any particular drug, but the removal of offensive accumulations from the alimentary tract and correction of the irritating acid reaction present, for which purpose he had found magnesium sulphate a simple and efficient agent, and not particularly distasteful.

THIRD DAY—MAY 9TH.

DR. CLARK PARKER read a paper on

ANTITOXIN IN SCARLET FEVER.

He reported the case of a child, about two years old, presenting symptoms of scarlatina, the eruption and other usual symptoms being present. The next day the case looked more like one of diphtheria, but, later, cultures showed streptococci only. The antitoxin was used with excellent results, however. The speaker said that he was convinced of the usefulness of the remedy in mixed cases. He used ordinary local treatment at the same time. A slight trace of albumin was found in the urine.

DR. B. MERRILL RICKETTS, of Cincinnati, read a paper entitled

A TREATMENT OF DOUBLE CLUB-FEET AND HANDS,

and narrated a case of congenital origin. Multiple neuritis was present, but its cause not apparent. There was marked deformity of both hands and feet, which was treated by plaster bandages. Improvement was rapid in the feet but slow in the hands, probably because of the aid to correction afforded by the weight of the body in standing and walking.

DR. WILLIAM E. LOCKWOOD, of Baltimore, read a paper on

TUBERCULOUS MENINGITIS,

based on cases and autopsies in his own practice. The study showed strongly the causal influences of heredity, and bad environment also; it had convinced the author of the importance of exercising great care in diagnosticating obscure cases of sickness in children when fever is present.

DR. FRANK S. PARSONS, of Philadelphia, read a paper on

THE CAUSAL RELATION OF TUBERCULOSIS IN INFANCY TO THE MILK OF TUBERCULOUS COWS.

He contended that the traces of old and healed tuberculous lesions, often observed at autopsies, might sometimes have been the remains of infantile infection by milk. The danger is not to the strong and robust body, but to the feeble; but there is no danger from the milk of tuberculous cows unless it actually contains the bacilli.

DR. J. P. CROZER GRIFFITH, of Philadelphia, read a paper on

THE DIFFICULTIES OF DIAGNOSIS OF PNEUMONIA IN CHILDREN.

He said that a limited area of dulness is likely to be overlooked, even on light and delicate percussion. In some cases no dulness is discoverable. Mistakes have actually occurred in which a diagnosis of pneumonia was made on the wrong side, as proved by autopsy. Broncho-pneumonia may be almost identical in local symptoms with croupous pneumonia. It is very liable to confusion with pleuritic effusion. Early pulmonary tuberculosis is another cause of confusion. Undoubtedly in many cases broncho-pneumonia is the ground for the development of pulmonary tuberculosis. In children the pain of pneumonia is often referred to the region of the abdomen. A case diagnosticated as peritonitis was related, in which the autopsy showed only pneumonia. Cough may be entirely absent and the pneumonia be overlooked in consequence.

DR. G. W. MCNEILL said that the diagnosis of tuberculous meningitis is not so easy as is indicated by the text-books. In one case he had been sure of the diagnosis, but the child got well on potassium iodid. He doubted whether recovery ever resulted in this disease.

DR. MARLHOUSE, of Connecticut, said that in pneumonia in children he had often found it impossible to make a diagnosis until after the fifth day. Possibly the morbid process had only been central. He did not believe that iodid did any good in tuberculous meningitis; more likely syphilis had been present in Dr. McNeill's case. Recovery is not to be expected in tuberculous meningitis. The time to get results in treating pneumonia is in the first stage. Afterward symptomatic treatment is alone useful.

DR. EDWIN KLEBS, of Asheville, N. C., read a paper on

ANTIPHTHISIN IN TUBERCULOSIS IN CHILDREN.

He said that uncomplicated cases are necessary to test the treatment, before suppuration has taken place and the infection has become mixed. In such cases, with the serum properly prepared and used, cures may be expected, whether tuberculous or scrofulous. All feeble and debilitated people do not have latent tuberculosis, although it is well-known that the disease may long lie dormant, as in scrofulous individuals. The good effects of antituberculin were illustrated by cases of pulmonary tuberculosis, glandular scrofula, tuberculous joints, and intraosseous tuberculosis. In the latter condition not so much benefit had followed the use of the remedy as in the others, in all of which cures were wrought by it.

DR. LARRABEE said that no one should undertake to diagnosticate a case of suspected tuberculous meningitis until after sitting by and watching the patient for an hour. The countenance should be watched for the knitting of the brows. This and other head-symptoms and the cephalic cry, with retracted abdomen and projectile vomiting, are necessary to make one feel sure. He thought that inherited syphilis is more frequent than is supposed. When he got good results in such cases as that of Dr. McNeill, he was disposed to believe he had unmasked this condition. Pleural symptoms of pneumonia subside with the development of those referable to the lungs. Referring to the paper of Dr. Klebs, he said that Koch had been premature in his announcement of tuberculin. We ought now to take it up without prejudice and give it an opportunity to prove its worth. He said that he recognized in scrofula an inherited condition distinct from specific tuberculosis.

DR. GRIFFITH said he believed in the possibility of recovery from tuberculous meningitis. He had seen at an autopsy evidence of such recovery. The hydrocephalic cry is not diagnostic, but is also observed in other conditions.

DR. KLEBS said that it had been conclusively shown that tuberculosis and scrofulosis are identical diseases. The cheesy glands of the latter contained germs capable of producing the former when implanted in other tissue. With antituberculin in pure tuberculosis or scrofulosis remarkable results were obtainable, but not in mixed cases. In answering a question, he said that antiphthisin is tuberculin in a purified form, and that it might prove dangerous in too large doses. He does not advise its general use for diagnostic purposes, but when in doubt he had himself used it for this purpose, and it was decisive, in much the same way as iodids in syphilis. He had tested the remedy in tuberculous meningitis in one case only, and that was a chronic case, which recovered.

DR. P. J. EATON, of Pittsburg, Pa., read a paper on

BROMOFORM IN THE TREATMENT OF PERTUSSIS.

He described the drug as a sedative, germicide, and antipyretic, and cited illustrative cases of its effects when administered in whooping-cough. The dose for young children is from two to six drops, beginning with the minimum and rapidly increasing to the limit of tolerance, and when the symptoms subside reducing gradually the dose. In adults the maximum dose is thirty drops. A child under treatment took by error half a dram and became semi-comatose, but recovered. An alcoholic solution should be used; when properly prepared it has a sweetish, pungent taste. If it causes nausea, it may be given in capsule. The remedy controls the disease and lowers the mortality.

DR. A. J. WORK, of Elkhart, Ind., read a paper on

SOME OF THE CAUSES OF INFANT-MORTALITY.

Among these causes he includes the crowding, poverty, and unsanitary conditions prevalent in great cities. The highest mortality is observed under the age of five years. Congenital weakness is evident as a cause in the great proportion of deaths just subsequent to birth. Hereditary influence evidently extends prior to birth and affects the population, and aids in diminishing the number of births.

Great carelessness exists among parents as to proper food and clothing for their children.

Contagious diseases form another important factor in the high mortality of infancy.

DR. W. D. BOOKER, of Baltimore, Md., read a paper on

MODERN METHODS OF PREPARING FOOD FOR INFANTS.

He stated that the smallness of size and weakness of function of the stomach of the newborn child deserve more consideration than they receive, as evidenced by overfeeding. Either regurgitation takes place or else overdigested material passes into the intestine. If cow's milk is given, it should be made as nearly as possible identical with mother's milk. This has not yet been perfectly accomplished. Sterilization is the most important advance yet made. It should take into account the care of the milk from the cow to the feeding. Germs multiply in milk in myriads within a few hours. When this happens injurious changes are produced in the milk, and interfere with sterilization. The feeding-bottle and nipple require close attention. The milk, to be sterilized, must be heated to 103° C. for about fifteen minutes. This heating does not impair its nutritive value or its digestibility. Fresh milk twice a day may not always require a complete process of sterilization. If diminution of summer diarrhea by the use of sterilized milk had not been observed by some, it was probably the result of imperfect measures. He thought that when the community became perfectly familiar with the processes of sterilization and had formed the habit of close attention to the most minute details this question would be no longer raised. Separation by centrifugal force of a part of the casein and of the fat of cow's milk, to reduce these ingredients to the same proportion as in the mother's milk, had recently been practised in Boston. At present the process is too expensive, but there is no reason in the nature of the process why it should not be made inexpensive in the near future.

Dr. A. C. Cotton, of Chicago, read a paper entitled

CARE OF INFANTS AND CHILDREN.

He described the practice adopted at the Chicago Presbyterian Hospital in caring for the newborn. The infant is not washed for several days, but is anointed daily with sweet-oil. There is great thirst, especially until the infant gets milk from its mother, and for this it is given warm water frequently. The baby is more readily cleansed by means of oil thus applied than by soap and water. Besides, the latter is irritating and drying to the tender skin, the former soothing and protecting. The cleansing is done by means of absorbent cotton saturated with oil. The heat of the body, on leaving the uterus, should be retained by suitable clothing, applied without delay, All elaborate clothing must, therefore, be dispensed with, such as pinning blankets, dresses with sleeves, etc. Simple, soft, loose, and warm garments only should be used, which can be quickly applied. Everything interfering with perfect freedom and comfort must be dispensed with. To sleep, eat, and eliminate are the functions of the infant. The conventional garments are an abomination. There should be no pressure or constriction of the clothing at any point. The abdominal bandage, if used at all, should be applied loosely. The painful process of washing, dressing, and undressing infants, as conventionally practised, appears absolutely ridiculous if we only stop to consider it fully. The wonder is that the frail little things are not killed outright. Samples of garments used in the hospital referred to were exhibited. An absorbent cotton pad is used as a diaper, to be destroyed when removed. A knitted worsted shirt is to be used, soft and elastic, but fitting moderately well; soft flannels should be used as the remaining garments, and loosely gathered about the neck, with blind loose sleeves. They should bifurcated for the lower extremities, and provided with a tucker-string for closing below the feet.

Dr. J. Madison Taylor, of Philadelphia, read a paper on

DEVELOPMENT OF HEADS IN CHILDREN.

He quoted Oliver Wendell Holmes as saying that education begins three-hundred years before birth. So with disease. It is not the disease itself that is inherited, but certain tendencies. Immunity to disease may become hereditary, as yellow fever in the negro; or it is acquired by the individual, as in the case of zymotic diseases. Probably the former has resulted from accumulation of impressions gradually transferred from the individual to the race. If this be the true explanation, it is prophetic of future immunity of the race to prevailing contagious diseases. No doubt parental influence is transmitted to the offspring, as in alcoholism, syphilis, scrofula, even lead-poisoning, it has been shown, and many other deleterious influences.

Intermarriage among different races sometimes leads to bad results. Thus a large percentage of the offspring of healthy Arabs and Swedes die of tuberculosis. Anything impairing cell-vitality reduces the power of disease-resistance. The present prevalence of rush and overstrain of nerve and brain is an influence of this kind, with very evil portent to Americans especially, unless checked. Otherwise future generations will suffer in consequence. Overworked school-children afford another sad example, especially girls, who are to be our future mothers. This sacrifice is made at the expense of future generations, no less than the health and happiness of the present. All joy of living, life itself, is sacrificed to what? A false ideal of education.

Dr. O'Brien, of St. Paul, Minn., said that he thought most children were born healthy, and only needed to be let alone, to breathe, sleep, eat, and eliminate, in order to thrive. "Out West" over-anxiety and care on the part of fond parents do more harm, in his opinion, than neglect.

Dr. I. N. Love, of St. Louis, Mo., read a paper on

INFANTILE SCURVY.

He said that many observations in eleemosynary institutions and private practice had convinced him that scurvy is more common among well-to-do people than is ordinarily believed. He had seen five cases in private practice, the histories of which were presented in detail. They all occurred in feeble, ill-nourished children. Scurvy in children is liable to be mistaken for rheumatism and *vice versa*. It results doubtless from lack of organic acids in the system, due to improper diet, or the incomplete digestion and assimilation of the food. This defect may be corrected by attention to the digestive functions, after supplying the requisite food. A teaspoonful of orange-juice given frequently provides an easy and effective remedy for deficient organic acid. There may be perfect digestion with imperfect assimilation. The requirement is for a food as nearly identical with mother's milk as possible. The food should be fresh, and not destroyed by sterilization.

Dr. Atkinson, of Baltimore, said that, although he would not dispute the existence of scurvy in infants, he could say he had never seen a case. In most children —in all nourished at the breast—the necessary conditions of the disease are absent. He thought that misapprehension prevailed regarding artificial foods. For example, condensed milk is only milk with the water evaporated. It decomposes readily. Canned milk is preserved milk, like fruit-preserves, preserved by sugar. It makes babies fat, but leaves them weak and flabby. Purpura hæmorrhagica occurs in children in marantic conditions which are not scorbutic, but might easily be thought to be.

Dr. Bishop, of Easton, Md., said he believed that children of sickly, diseased constitutions ought not to be too much encouraged to grow up. In this respect our charitable institutions were encouraging an evil. Society would become more and more burdened with unhealthy people. Weaklings ought to be allowed to die to prevent the propagation of their kind. They propagate faster than the healthy.

Dr. Love said that not only is the maternal condition during pregnancy important to the child, but also the condition of the mother at the time of conception, and even the whole question of marriage deserved consideration. Referring to the last speaker, he asked what normal father or mother would consent to the death of the weakly offspring? Who could know at birth but that the veriest weakling might be potential of a great statesman or poet. The speaker said he was absolutely sure of his diagnosis in his cases of scorbutus, nor did he believe other observers had been mistaken in theirs. Scurvy occurs among children, and the general practitioner should be on the lookout for it.

SECTION ON SURGERY AND ANATOMY.

THIRD DAY—MAY 9TH.

DR. CARL BECK, of New York, read a paper entitled

ASEPSIS ON SOME POINTS REGARDING OPERATIONS IN PRIVATE DWELLINGS AND THE DEMONSTRATION OF SOME NEW ASEPTIC APPLIANCES.

He advocated operating in private dwellings if occasion should require, and stated that it was not necessary to take down the pictures, take up carpets and remove the furniture, but a thorough cleaning of the room a day or so prior to operation was all that was required. He also exhibited some new aseptic appliances, consisting of a series of pans which fitted in each other, used for sterilizing the instruments, etc.

DR. J. B. MURPHY, of Chicago, read a paper entitled

ILEUS,

in which he stated that all kinds of intestinal obstruction were confounded with ileus. By the term ileus is meant, not a distinct pathologic condition, but a complex of symptoms. The patient is attacked with pain in the abdomen of greater or less severity, accompanied by nausea or vomiting, or both, and also by an inability to effect a bowel-movement. The three causes of ileus are: 1, paralysis of the muscular layer of the bowel; 2, mechanical obstruction; 3, the opposite of paralysis, a spasmodic contraction. Ileus may be considered in two great classes, that in which the motor power is interfered with, and that in which mechanical interference prevents the proper passage of the intestinal contents. Thus we have a dynamic and a mechanical form of ileus.

DR. GEORGE WILEY BROOME, of St. Louis, read a paper entitled

SCIENTIFIC USE OF THE SURGICAL FLAP.

DR. HENRY O. MARCY, of Boston, read a paper entitled

THE SURGICAL TECHNIQUE OF ASEPTIC WOUNDS.

DR. B. MERRILL RICKETTS read a paper entitled

FLAT-FOOT, SUPRA-MALLEOLAR OSTEOTOMY, WITH REPORT OF A CASE.

Photographs and specimens of feet of men, orang, baboon, chimpanzee, and gorilla were presented for examination. Flat-foot was referred to one of three causes: 1, failure of the tarsus to become arched; 2, rickets; 3, trauma. The condition becomes aggravated with age. All bipeds are born flat-footed, the arch being an after-development. High arches are found in the fleetest runners. Barbarous nations do not have any very perceptible arch or inconvenience therefrom. Man's nearest allies, the chimpanzee, gorilla, orang, and baboon, have but little indication of the arch; on the other hand, the tarsus in the chimpanzee, his nearest ally, lies upon the plane, while in the gorilla the posterior surfaces of the os calcis do not touch the plane to any degree whatever. However, the posterior part of the os calcis, together with the tips of the toe, supports the body, the tarsus not touching the plane. This is also the case with the orang. The construction of the hands and feet of the quadrumana are of the same pattern as those of man, but they are not so symmetrical or so well adapted for diversified use. The manner of dressing the foot in early life is a prominent factor in causing pain and discomfort. The degree of the arch of the foot increases with civilization. But little benefit can be derived from any kind of appliances except in the lesser forms of deformity. Aggravated forms of flat-foot should be subjected to the operation of Trendelenburg or Gluck regardless of what the cause may be. So far as can be determined by observation the relief given by the Trendelenburg operation has been absolute. Other things being equal, the operation of Gluck, dropping the posterior half of the os calcis, would be most desirable. If the osteotomies are made subperiosteal and aseptically, without applications, no serious results should follow. The first plaster-of-Paris dressing, which has been fenestrated and re-enforced by small ribs of steel, should be removed at the end of the tenth or twelfth day, and the new one adjusted to make sure that reduction of the proper degree has been effected.

Dr. Ricketts said that his own experience would lead him to operate unhesitatingly upon any flat-foot, if the deformity could not be relieved by a mechanical device.

A paper entitled

DIAGNOSIS AND TREATMENT OF TUMORS OF THE BRAIN, WITH A REPORT OF SEVEN CASES,

by DR. EMORY LANPHEAR, was read by title; likewise a paper by DR. G. F. SHIELDS, entitled

TWO CASES OF EXTENSIVE EXCISION OF THE ELBOW.

DR. FENGER, of Chicago, read a paper entitled

GALL-STONES IN THE COMMON DUCT AND THEIR SURGICAL TREATMENT, WITH REMARKS UPON THE BALL-VALVE ACTION OF FLOATING CHOLEDOCHUS STONES,

and which he illustrated by means of a chart.

DR. J. C. OLIVER, of Cincinnati, read a paper on

SKIN-GRAFTING AFTER THE METHOD OF THIERSCH.

He stated that this method is useful when one desires (1) to prevent deformities produced by granulations; (2) to replace large areas of uncovered skin; (3) to replace cicatricial tissue or skin. It was stated that the skin to be used should be preferably taken by means of a razor from the thighs of the patient to be operated upon if practicable. The danger of transmitting disease, and syphilis in particular, by taking live skin from another person, was referred to.

DR. MARCY presented for examination a man upon whom Dr. L. A. Sayre had operated and dissected the hip-joint, and removed six or seven inches of the femur. The operation took place when the subject was a boy, and now having reached manhood he is able, with the aid of an extension shoe, to use his leg as well as a perfect one.

A paper entitled

HYPERTROPHY OF THE THYROID GLAND; AN EXPERIMENTAL STUDY,

by DR. WILLIAM S. HALSTED, of Baltimore, Md., was read by title.

A paper by DR. J. HARVEY REED, ot Columbus, O., entitled

A CONFUSION OF IMPORTANT TERMS, AND SOME OF THE CONSEQUENCES,

was read by title.

DR. S. F. FORBES, of Toledo, O., read a paper entitled

EXSECTION OF THE KNEE-JOINT, WITH REPORT OF A CASE OF COMPLETE DISLOCATION OF THE KNEE OF NINE YEARS' STANDING, WITH SPECIAL REFERENCE TO METHODS OF FIXATION.

In the discussion, DR. MACLEAN, of Detroit, stated that he was strongly in favor of the resection of the knee-joint.

DR. E. A. TRACY, of Boston, read a paper entitled

THE NEW SURGICAL SPLINTING—REPORT OF CASES EXEMPLIFYING IT.

The dressing consists of a casing composed of crushed wood-fiber, rolled into flat sheets, which are moulded on the limb or portion ot the body requiring to be held in position, and when dry fits tightly and perfectly, holding the limb in position accurately.

DR. JOHN E. LINK, of Terre Haute, read a paper entitled

A SIMPLE METHOD OF DRESSING FRACTURES OF THE EXTREMITIES AUXILIARY TO THE BANDAGE.

He demonstrated a method of dressing fractured limbs by bandaging and interlacing between the bandages flexible strips of wood, this forming a perfectly strong support, and holding the limb as tightly, and even more so, than if it were packed in plaster-of-Paris. Dr. Link claimed for this method that while it held the limb as well, if not better than any other, it put the limb at rest, and did away with the pain that usually attends fractures as a result of cramp in the muscles, etc.

FOURTH DAY—MAY 10TH.

DR. THOMAS H. MANLEY, of New York, read a paper entitled

DEFORMITIES FOLLOWING FRACTURES OF THE SHAFTS OF BONES.

CORRESPONDENCE.

AS TO CASTRATION FOR HYPERTROPHIED PROSTATE—A PROTEST AGAINST A PROTEST.

To the Editor of THE MEDICAL NEWS,

SIR: While I am willing and anxious to recognize all well-founded objections to the operation that I suggested to the profession, I cannot regard the latest communication on the subject (that of Dr. Alexander in *The New York Medical Journal* of May 11th) as dealing with the matter in the light of the facts already demonstrated and familiar to most surgeons. Dr. Alexander collates eleven cases, every one of which had been previously published by me (THE MEDICAL NEWS, June 2, 1894; December 15, 1894), but he ignores a large number of cases since reported. The basis for argument has greatly extended during the last six months. If the subject is of importance enough to require a "protest," the latter should be founded on a consideration of the whole question as it presents itself to-day. Dr. Alexander gives no indication of having operated himself, or of having watched a case after operation. He says he will "admit, *for the sake of argument*, that double castration may cause a shrinkage of the prostate" (the italics are mine); but, following Drs. Bangs and Belfield, he "cannot believe that the atrophy will be so marked as to be clearly appreciated within a few days or weeks after the operation, in spite of Dr. White's experiments on dogs and the results obtained in the cases thus far reported." He asserts (again following Drs. Bangs and Belfield) his belief that the diminution in size of the prostate and the voluntary evacuation of the bladder are "more likely to be the result of rest in bed and careful catheterism than of atrophy." Dr. Bangs stated in the discussion that ensued that he had come to the same conclusions, and that "it was an ingenious theory based upon observations in regard to eunuchs and the lower animals, but to apply it to a pathological condition and to patients of advanced age did not seem to him at all rational."

I am truly surprised that these gentlemen should hold these opinions to-day. It is beyond the bounds of reason to suppose that cases observed and operated upon by well-known surgeons all over the world should have been submitted to castration when the same results would have been obtained by "rest in bed and careful catheterism." In many instances this is expressly stated to have been tried and to have failed. In the large majority it doubtless was tried, whether it is so stated in the reports or not. The value of this treatment as a palliative is part of the knowledge of every general physician.

It is equally surprising to find that they believe that the subsidence of prostatic edema has been mistaken for atrophy, not only by clinical observers who have watched these cases together—Moullin and Dean in London, Meyer and Haenel in Dresden, Watson and Gavin and Beach and Warren in Boston, Finney and Halsted in Baltimore, Lilienthal and Gerster and Fluhrer in New York, etc.—but that they think such an admirable pathologist as Griffiths is also mistaken when he gives in great detail the results of his microscopic study of the hypertrophied prostate eighteen days after double castration.

I confess that when I read my original paper I feared to hear that it was not "rational" to argue from experiments on dogs and observations on eunuchs to the therapeutics of a "pathological condition in patients of advanced age." It was this fear that led me to say not only, as Dr. Alexander inaccurately asserts (quoting only part of a sentence), that I "had not the courage of my convictions," but that "it would be truer to say that I have as yet no definite convictions," but was seeking further light on the subject from the criticism of my professional colleagues. Such criticism, however it might disappoint me in my ambition to add something of value to surgery, would, if well-founded and carefully considered, be thankfully received and fully appreciated.

But criticism that ignores well-established facts already the property of the profession at large can scarcely be met in that spirit. I see that Dr. Keyes opened the discussion on Dr. Alexander's paper by offering him his "moral support." I am glad of this, as Dr. Alexander in nearly all of the eleven cases which he gives has done me the honor of using my summary and translation without acknowledgment, and has even included some typographic and other unimportant errors that I had made inadvertently. As his "protest" embodies a plea for accuracy, it would have been well for him to set the example. I do not allude to his spelling "Meyer" "Mayer" (copying my blunder), or "Haenel" "Haenal," or "Haynes" "Hayes," etc., but to his actual misquotation of important statements. I said of my first case that "fourteen weeks later while he had not yet urinated spontaneously, etc." (MEDICAL NEWS, June 2, 1894). He says, "Fourteen weeks later the patient could pass water through the urethra." I said of Moullin's case, quoting that writer accurately, that in three weeks "the bladder had begun to regain power." He says, quoting me inaccurately, "the bladder had regained power." He rejects Dr. Haynes' cases as "of no scientific value owing to the very imperfect reports which he gives," although further details were published by Dr. Haynes eight months after the paper from which Dr. Alexander quotes, which was the one I quoted from nearly a year ago. Even in one important detail which Dr. Haynes does give he misquotes him, transforming the statement that "one-third of the urine is passed spontaneously" into "the patient passed urine spontaneously," although later he prays for more "careful noting" of the amount of residual urine, etc.

These and similar evidences of carelessness are worth commenting upon in an article that assumes so much want of care on the part of the dozens of surgeons who have now employed this method. Personally, I agree with Watson, who says that in this as in other new surgical procedures our attitude should be "critical rather than credulous or skeptical."

Sir Joseph Lister, however, feels warranted in speaking of the operation as "a valuable addition to our art;" and Fenwick in stating that "there is no doubt that slow shrinkage of the prostatic tissue in many of the forms of senile enlarged prostate ensues upon double castration;" and Moullin in writing, "Removal of the testes is followed in a large proportion of cases, if not in all, by complete and rapid absorption of the enlarged prostate. This has now been proved conclusively. The gland entirely disappears; nothing is left but a little fibrous mass;" and Cabot in asserting that "the effect of castration in reducing the size of the chronically hypertrophied prostate is undoubted. A sufficient number of cases have been reported to show that." When these gentlemen are willing to take this position, it seems to me a little late for Dr. Bangs to speak of the operation as not "rational," and Dr. Alexander, after his alleged "Critical Study of the Subject from a Clinical Standpoint," to assert that "it can at present be offered to a patient only as a physiological experiment." But I may be prejudiced. I am, sir, yours, etc.,

J. WILLIAM WHITE.

1810 S RITTENHOUSE SQUARE, PHILA.

EVACUATION OF THE TYMPANUM.

To the Editor of THE MEDICAL NEWS,

SIR: In your issue of April 27, 1895, there is an article on "Evacuation of the Tympanum," by Donald B. Fraser, M.B., M.R.C.S., England, of London, Ontario, upon which, though full of error and internal evidence of a want of knowledge of, at least, modern aural surgery, I had decided to make no comment, as I hoped that no one would be injured by following the wrong advice there given. However, as in your issue of May 18, 1895, there is a second communication from Mr. Fraser, on this topic, the advice in which, if followed, would do still more harm to the patient, I feel that the statements in the two communications must not go unchallenged.

Mr. Fraser is wrong in saying that all authors "recommend inflation of the middle ear as the only means of evacuation of the middle ear." The middle ear cannot be evacuated in this way. The only method of evacuation of the tympanum is by means of paracentesis of the membrana tympani, of which Mr. Fraser appears to be ignorant, as it was not employed in his own case. The method of evacuation then conceived, recommended, and practised was nothing more than a combination of aspiration and the "negative Valsavan method," no mention of which the author makes, though this method is well known to all aurists. Subsequently he seems to have relied entirely, in his own case, upon the "negative Valsalvan method," speaking of it as his own invention. His subsequent advice to inflate during expiration and evacuate during inspiration, if carried out, would manifestly, first, force septic secretions from the naso-pharynx into the drum cavity, and then draw them out again. It is equally manifest that such a treatment would be irrational, to say the least, and if accomplished would certainly further inflame the already diseased middle ear and seriously jeopardize the health of the unaffected one. It is hoped Mr. Fraser failed to do in this respect what he thinks he did.

Still more to be condemned is the suggestion, in the communication of May 18th, to accomplish this forcing of matter into and out of the drum-cavity, which he calls evacuation, by the use of a bulb-syringe or air-pump arrangement. This method would not only have all the bad features of the method first suggested, but would possess the additional injurious element of dry-cupping the entire nasal and naso-pharyngeal spaces, which could do only further harm, in addition to the plan suggested of drawing mucus and muco-pus in and out of the middle ear. If there is any kind of exudation in the drum-cavity, imitate nature by making an incision in the membrane and effecting an exit to the pent-up matter. Then do as any surgeon of the present day would do with an empyema anywhere else: close the wound by putting a little iodoform gauze in the auditory meatus, cover the ear with an absorbent, antiseptic dressing, and let the whole alone for from twenty-four to forty-eight hours, when renew with similar fresh dressings. When such treatment of acute tympanic exudation is applied, *i.e.*, when *antiseptic drainage*, instead of blowing or injecting something into the ear or Eustachian tube, is insured the ear invariably heals in a few days, according to my experience. Secondary mastoiditis in properly treated otitis media never occurs. Certainly no more dangerous treatment for acute otitis media, with exudation in the drum cavity, could be devised or practised than that suggested in the two communications mentioned above. Certainly no aurist of authority would sanction such procedures in any form of otitis media.

Yours truly,

Charles H. Burnett.

NEWS ITEMS.

The Association of American Physicians will hold its tenth annual meeting in the Army Medical Museum and Library, in Washington, D. C., on May 30 and 31, and June 1, 1895. The following program has been arranged:

President's Address, by William Osler, Baltimore. General Business, Reports, etc. Leucomain-poisoning, by B. K. Rachford, Cincinnati. Some Toxicogenic Germs found in Poisonous Foods, by V. C. Vaughan, Ann Arbor, and George D. Perkins, Ann Arbor. The Effects of the Gaseous Products of Decomposition upon the Health of Animals that are Compelled to Respire them, by A. C. Abbott, Philadelphia. Renal Affections following Influenza, by G. Baumgarten, St. Louis. A Contribution to the Study of Thoracic Tumors, by William Pepper, Philadelphia, and Alfred Stengel, Philadelphia. Etiology of Idiopathic Hypertrophy of the Heart, by James T. Whitaker, Cincinnati. The Transmission of Mitral Diastolic Murmurs, by J. P. C. Griffith, Philadelphia. Use of the Differential Stethoscope in the Study of Cardiac Murmurs, by A. H. Smith, New York. The Cause of the Exaggeration of Sounds over the Right Upper Chest, both in Health and Disease, by Charles Cary, Buffalo. Discussion on Diphtheria Antitoxin. Preparation of Antitoxin, by H. C. Ernst, Jamaica Plain. A Case of Madura Foot (Mycetoma Pedis), by J. G. Adams, Montreal. Gonorrheal Arthritis—Clinical Observations, by W. P. Northrup, New York. Hyperthermy up to 65.5° C. (148° F.), by A. Jacobi, New York. A Comfortable Way of Using Cold in Fevers, by F. H. Williams, Boston. Some Observations on the Spleen and Marrow in Leukemia, by J. Guitéras, Philadelphia. Goitre in Michigan, by George Dock, Ann Arbor. Displacements of the Liver, by J. E. Grabam, Toronto. Carcinoma of the Liver with Cirrhosis, by M. H. Fussel, Philadelphia. Epidemics of Typhoid Fever, Scarlet Fever, and Diphtheria Due to Milk Infection, by S. C. Busey, Washington. Forcible Artificial Respiration—Fell-O'Dwyer's Apparatus—Cases, by W. P. Northrup, New York. Carosso's Treatment of Pulmonary Tuberculosis, by H. C. Ernst, Jamaica Plain. On the Direct Faradization of the Mucous Membranes of the Stomach and the Intestines of Animals (Dogs, Cats, and Rabbits), by S. J. Meltzer, New York. Two Cases of Fat-necrosis, by C. G. Stockton, Buffalo.

The Fifth District Branch of the New York State Medical Association will hold its eleventh annual meeting in Wurzler's Building, 315 Washington Street (near City Hall Square), Brooklyn, on May 28, 1895. The program includes the President's Address, by Austin Flint. Biographical Sketches of the late Dr. S. T. Hubbard, by S. S. Purple and John Shrady; Dr. H. Goldthwaite, by Charles Phelps; Dr. M. D. Field, by Stephen Smith. Scientific papers on Living Bacteria in the Bladder, by X. T. Bates. The Advocation of a New Method of Operation for Marked Deflection of the Nasal Septum, by S. Oppenheimer; Discussion opened by F. C. Raynor. The abuse of Medical Charities, by Frank Van Fleet. Ectopic Pregnancy, by Edwin Barnes; Discussion opened by L. Grant Baldwin. Overfeeding, by T. J. Barton; Discussion opened by Jerome Walker. The Propriety of Administering Digestive Ferments, by H. A. Haubold; Discussion opened by Austin Flint. Chronic Catarrhal Laryngitis, with Special Reference to its Etiology, by Dwight L. Hubbard; Discussion opened by Jonathan Wright. A Few Clinical Notes on a Recent Series of Operations, by Thomas H. Manley.

The Ohio State Medical Society held its semi-centennial at Columbus, May 15th, 16th, and 17th. The meeting was the largest in the history of the Society, about 500 being in attendance. Also 104 new members were received, being a larger number than at any previous meeting.

The following officers were elected: *President*, Daniel Milliken, M.D., Hamilton; *Vice-Presidents*, J. H. Goss, M.D., Lancaster; W. H. Humiston, M.D., Cleveland; John W. Murphy, M.D., Cincinnati; B. M. Ricketts, M.D., Cincinnati; *Secretary*, Thomas Hubbard, M.D., Toledo; *Assistant Secretary*, H. M. W. Moore, M.D., Columbus; *Treasurer and Librarian*, James A. Duncan, M.D., Toledo. Standing Committees: *Finance*, J. G. F. Holston, M.D., Zanesville; *Ethics*, J. C. Reeve, Sr., M.D., Dayton; *Publication*, R. Harvey Reed, M.D., Columbus; *Legislation*, G. A. Collamore, M.D., Toledo; *Admissions*, A. B. Richardson, M.D., Columbus.

Dr. Morris H. Henry, a well-known surgeon of New York City, died on May 19th, at the age of seventy years. During the late war he was an assistant surgeon in the U. S. Navy, and from 1872 to 1880 Surgeon-in-chief of the New York State Emigrant Hospital. He was the founder of the *American Journal of Dermatology*. He is credited with having organized the present ambulance system of the city of New York.

Helmholtz Memorial.—It is proposed to erect in Berlin a monument to Helmholtz, the distinguished physicist and inventor of the ophthalmoscope, who died recently. For this purpose an International Committee has been formed, the American representative of which is Prof. Hugo Münsterberg, of Harvard University, who will be glad to receive subscriptions.

Dr. W. M. L. Coplin, Adjunct Professor of Hygiene and Demonstrator of Pathology in Jefferson Medical College, has been chosen by the Trustees of the Vanderbilt University to take charge of its Departments of Pathology, Biology, and Bacteriology.

The Mitchell District Medical Society will hold its forty-seventh semi-annual meeting at West Baden, Orange County, Indiana, on July 5 and 6, 1895. An interesting and elaborate program is in course of preparation.

Prof. Carl Vogt, the distinguished German biologist, died at Geneva on May 6th, at the age of seventy-eight years.

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ORIGINAL ARTICLES.

THE RESULTS OF THE TREATMENT OF FORTY CASES OF DIPHTHERIA WITH THE ANTITOXIN.

BY WILLIAM T. HOWARD, JR., M.D.,
PROFESSOR OF PATHOLOGY IN THE WESTERN RESERVE UNIVERSITY, CLEVELAND, OHIO.

[*From the Pathological Laboratory of the Western Reserve University.*]

IN December last, in Ashtabula, Ohio, there was a sudden and widespread epidemic of diphtheria. From the 5th to the 13th of the month there were reported at the Health Office 63 cases of diphtheria with 17 deaths, or a mortality of about 27 per cent. Besides the fatal cases there were on the 13th a number of patients desperately ill and looked upon as entirely hopeless. The inhabitants were panic-stricken, and the Health Board determined to try to check the epidemic by the employment of the antitoxin. With this object in view, and as an experiment, Dr. A. W. Hopkins, the local officer of health, obtained a dozen bottles of antitoxin from the New York Biological and Vaccinal Institute, for use in the most desperate cases. I was asked to take charge of the administration of the remedy and to keep records of the observations made. In all the cases seen by me (25), cultures were made from the throats before the treatment was begun. On December 16th treatment was commenced with three of the most desperate cases (Nos. XXXIII, XXXVIII, and XXXIX). Two of these showed marked improvement in a short time; Case XXXVIII died on the third day. All three cases were well advanced in the disease; two, five days, and one, six days. About the same time the antitoxin was given with marked benefit to some less severe cases. Encouraged by these results the Health Board kept a constant supply of the antitoxin on hand, which was placed at the disposal of any physician who wished to use it. The only restrictions were that I should be present to represent the health officer and to make cultures from the throats of the patients treated. It was a matter of routine in the houses in which cases were treated with the antitoxin to give immunizing doses to the other members of the household. Following these measures there was not only a striking lowering of the mortality in the diphtheria-cases, but the number of cases in the infected houses rapidly diminished.

In all I have records of 40 cases of diphtheria treated with the antitoxin in Ashtabula. Twenty-five of these cases I saw personally with the attending physicians; the histories of the remaining cases have been furnished me by the physicians. In some instances they have completed my records from their own notes. The following physicians had charge of the cases: Dr. Aldrich 11, Dr. Dickson 3, Dr. Dorman 1, Dr. Flower 17, Dr. Gilchrist 3, Dr. Hopkins 1, Dr. Morse 3, Dr. Pardee 1. I take this opportunity of expressing to these gentlemen my thanks for their uniform kindness and courtesy to me.

The cases, for convenience of study, may be divided into mild (8), of medium severity (14), severe (10), malignant (8).

In the forty cases cultures were made from the throats in 29; in these the bacillus diphtheriæ was found alone in 20, the bacillus diphtheriæ and the staphylococcus aureus in 5, and the bacillus diphtheriæ and the staphylococcus aureus and the streptococcus pyogenes in 3. In one undoubted case of diphtheria (Case No. XXXIV) the bacillus diphtheriæ failed to develop. Of the 25 cases which I saw and made cultures from, the bacillus diphtheriæ was found in all. Of the 40 cases 3 died, a mortality of about 7.5 per cent. Of the mild cases the youngest was three years and the oldest twelve years, with an average age of 7.2 years. In 5 of these the treatment was begun within twelve hours from the onset of the disease, in 2 within twenty-four hours, and in 1 on the second day. Of the 14 cases of medium severity the youngest was 4.5 years, the oldest twenty seven years, with an average age of ten years. Ten were under fifteen years. Of these 14 cases, in 11 the treatment was begun on the first day of the disease, in 2 on the second day, and in 1 on the fifth day. Of the 10 severe cases the youngest was 4.5 years, the oldest forty-three years, with an average age of 22.8 years. Six were treated on the first day, 2 on the third, 1 on the fourth, and 1 on the fifth day; average 2.1 days. Of the 8 malignant cases the youngest was four months, the oldest twenty-seven years; the average age was fifteen years. In 2 the treatment was begun on the second day (all recovered), in 1 on the third day (recovery), in 1 on the fourth (death), 1 on the fifth (recovery), and in 2 on the sixth (death in both); average 3.75 days. An analysis of all the cases taken together shows that the treatment was begun on the first day in 19, on the second day in 6, on the third day in 3, on the fourth day in 2, on the fifth day in 3, and on the sixth day in 2.

Dosage. From the beginning the size of the dose given varied with the severity of the attack. The initial dose was usually the contents of one of the bottles, from 23 to 25 c.cm.[1] The mild cases, however, each received only from 15 to 20 c.cm. in all. In 4 of these latter cases the whole amount received was given at once, while in the rest it was given in two doses. These cases were treated so early in the disease that these comparatively small doses sufficed.

After the initial dose the size and frequency of the succeeding doses were regulated almost entirely by the severity and the seeming demands of the case, but in some instances it was limited by the supply of the antitoxin on hand. In several of the first cases we would have given larger and more frequent doses but for a temporary lack of the remedy. Several cases undoubtedly suffered on this account. It was very interesting to watch them improve to a certain degree, with the general condition markedly improved and the false membrane checked or even separating, and then on withholding the remedy, on account of the lack of it or on account of faulty judgment in some cases, to observe the return of the prostration and the reformation and spreading of the false membrane. On again exhibiting the antitoxin these cases would show rapid improvement. As will be seen later, we found the condition of the pulse and the appearance of the false membrane the best guides for the dosage. The smallest amount given in any case for treatment was 15 c.cm., the largest 113 c.cm. The mild cases received 16 c.cm. as an average dose. Cases of medium severity received from 20 to 55 c.cm., the average being 38 c.cm. The severe cases received from 23 to 70 c.cm., the average being 50.7 c.cm. The malignant cases received from 17 to 113 c.cm. Leaving out the case receiving 17 c.cm. (an infant of four months), the average amount received by this class was 71 c.cm. In looking back upon our experience I am confident that some cases, although they recovered and did well, received less than was good for them.

Mode of administration. The remedy was given by means of a large (25 c.cm. capacity) hypodermic syringe, which was sterilized before and after use by washing with a 5 per cent. solution of carbolic acid. Several parts of the body were tried as places for the injections. We found by experience that the soft pad of the buttock was the best place. Not only was the pain less here, but the serum was absorbed from this point very much more quickly than from any other place tried. If the skin is stretched taut with the thumb and the index and middle fingers of the left hand, and the needle of the syringe is plunged quickly through the skin there is little or no pain. Indeed, young children, if they are ignorant of what is about to be done, scarcely wince when the needle is passed through the skin. At the first plunge, the needle, with the patient lying on the back or on the opposite side, should not go more than from 1 to 1.5 cm. into the tissues; after this the needle can be slowly pushed in without giving rise to pain in any direction, and as deeply as necessary. The injection should be made slowly. When these precautions are taken practically no pain is experienced. The tissues are so soft and loose in this region that the fluid is rapidly absorbed and gives rise to little bulging of the part. We repeatedly gave patients a number of injections in the same buttock without discomfort or ill effects.

An accident was met with in only one case. This was in a thin child, who, knowing what was about to be done, jumped toward the needle as it was plunged in. The point of the needle hit the bone and the needle broke off half-way betwen the point and the shank. About two weeks later the needle was felt under the skin and was readily removed. Even in this case there was no inflammatory reaction. With the large number of injections made we have not had a single case of infection.

Effects. The earliest and one of the most striking and characteristic effects met with following the injections of the antitoxin were on the pulse. These were best observed in the severe and malignant cases on account of the extremes. We have repeatedly observed a decided rise in the arterial tension within fifteen minutes after an injection. This, however, was not constant. But we could nearly always note a slowing of the pulse-rate in from ten to fifteen minutes after an injection. Frequently, even in very severe cases, the pulse-rate would fall from five to ten beats per minute. In from six to twelve hours it was frequently observed to fall twenty or more beats per minute. In from twenty-four to forty-eight hours the pulse was usually down to 80 or 90. Corresponding with this fall in the pulse-rate there would be a marked increase in the strength of the pulse with a rise in the arterial tone. The heart-sounds always became louder and stronger after the injections. In several cases, cyanotic at the commencement of the treatment, the cyanosis cleared up in a remarkable way. This was especially striking in Case XXXVIII. The effect upon the heart was apparently not entirely explained by the antitoxic action of the remedy.

Temperature. There was usually a decided fall in the body-temperature in from twenty-four to forty-eight hours after the treatment was instituted. In some cases this was marked and rapid, in others gradual.

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[1] The strength of a sample of the antitoxin used was tested on guinea-pigs in my laboratory by Dr. Clarence O. Arey. According to his experiments, it had an antitoxic value of 1 to 50,000, or contained about 60 antitoxin units to the cubic centimeter. This is about the strength of Behring's No. 1.

Respirations. No changes attributable to the remedy itself were noted in regard to the respirations.

False membrane. Within the first twelve or twenty-four hours there was very little, if any, change noted in the appearance of the false membrane. In the severe cases it would often increase somewhat during this time. But usually at the end of twenty-four hours, and nearly always after forty-eight hours, decided changes were noted. In the first place the formation of the membrane ceased. Then the previously dry, opaque, dirty-gray membrane became moist, somewhat translucent, and milky or pearly-white in appearance. After this it began to curl up and loosen at the edges. When the false membrane was thick and piled up, frequently large masses separated from the surface and were coughed up. Although this was often noted, the chief and most constant point of separation seemed to be at the surface or border between the false membrane and the mucous membrane of the part. Thin, filmy false membranes, which were not infrequently noted extending from the uvula over the roof of the mouth, would often fade away in a few hours, often before the thicker, denser, older portion showed any changes at all. Of the mild cases the false membrane had entirely disappeared in 1 at the end of twenty-four hours, in 6 in two days, and in 1 in three days. In the cases of medium severity it disappeared in 4 on the second day, in 4 on the third day, in 3 on the fourth day, in 2 on the fifth day, and in 1 on the sixth day; an average of 3.5 days. In the severe cases it disappeared in 1 on the second day, in 1 on the third day, in 5 on the fourth day, in 2 on the fifth day, and in 1 on the seventh day; an average of 4.7 days. In the malignant cases it disappeared in 1 on the third day, in 1 on the fourth day, in 2 on the fifth day, in 2 on the sixth day, and in 1 on the seventh day. One case died without the disappearance of the false membrane, although it had decreased. After the disappearance of the false membrane from the throat the affected part healed very rapidly. It was noticed by all who saw the patients that the appearance of the affected surface was much better in the cases treated with the antitoxin than in the cases in which it was not used.

Effects on the general condition. Usually within twelve hours, and nearly always within twenty-four hours, there was a marked improvement in the general condition. Patients much prostrated before would in this time express themselves as feeling very much better. It was not uncommon to see patients, even in the severe and malignant cases, sitting up in bed twenty-four or forty-eight hours after the treatment was begun. They not infrequently said that they felt stronger after the injections. Patients would often appear bright and cheerful long before the separation of the false membrane. In none of the mild cases were there any after-effects attributable to the antitoxin. Of the cases of medium severity 1 (XXI) had simple urticaria four days after the disappearance of the false membrane; 2 (XIX and XX) had urticaria and swelling of the joints and of the inguinal glands. Of the severe cases three had urticaria. One of these had a very severe attack of urticaria, with painful swelling of the inguinal glands (Case XXIX), and another (Case XXXII) had urticaria, with severe muscular soreness and slight dimness of vision. Of the malignant cases two had urticaria and one had painful and swollen joints. In all of these cases the swelling of the joints, the muscular soreness, and the glandular enlargement disappeared in a few days, and the patients made complete recoveries. In some of them the pain was distressing. These symptoms seemed to have no special relation to the amount of the antitoxin given.

Complications. It is of especial interest to note that of the forty cases treated with the antitoxin only one developed paralysis. This was a malignant case treated on the sixth day of the disease (Case XXXIII), in which some weeks after the disappearance of the false membrane paralysis of the pharynx and of the lower extremities developed. The patient has completely recovered. A large proportion of the cases in which the antitoxin was not used had marked paralysis. In a number of the fatal cases not treated with the antitoxin death was referable to failure of the heart. In only three of the cases treated with the antitoxin were there any heart-symptoms. Two had slight cardiac irregularity and some dyspnea for several weeks and then entirely recovered. The third case (XXXIX) died of acute dilatation of the heart. In this case the antitoxin-treatment was begun on the sixth day. Although the patient was very ill, it was thought that she would recover. This patient received the largest amount of antitoxin given, 113 c.cm. It is evident that her heart was extensively damaged before the treatment was begun (she was cyanotic at the time of the first injection), or that we did not administer enough of the remedy. Hers was one of the first cases. It was not found possible to obtain records of accurate urinary examinations, which is to be deplored. In two of the cases in which urinary examinations were recorded a small amount of albumin was found. In both cases this was transient, and complete recovery followed. In none of the cases were there clinical symptoms referable to the kidneys. In nine of the twenty-nine cases in which a bacteriologic examination was made mixed infection was present. The streptococcus was present in only three of these.

The other two fatal cases are of interest. One was in a boy six years of age, with diphtheria of the nose, pharynx, tonsils, uvula, roof of the mouth, and larynx. He showed improvement for two days. Twelve hours before death he was intubated, with but little relief. He was treated on the sixth day, and died with pneumonia. He had had measles two weeks before the appearance of the diphtheria. He was the first case treated with the antitoxin. While the case was apparently hopeless, I am now confident, in the light of our subsequent experience, that he did not receive nearly enough antitoxin, and was probably not given a fair chance. The last fatal case was an infant four months old, treated on the fourth day of the disease. It showed decided improvement, but died several days after the disappearance of the false membrane, apparently of septicemia. From the throat of this case, in addition to the bacillus diphtheriæ, there were large numbers of the staphylococcus pyogenes aureus. In two of the fatal cases there was mixed infection.

In the forty cases reported there is a mortality of only 7.5 per cent. If the two fatal cases treated on the sixth day are excluded, the mortality sinks to 2.5 per cent. Besides the forty cases here reported there have been treated in Ashtabula at least ten or fifteen more without a death.[1] In none of these cases, however, was a bacteriologic examination made, and no notes of them have been sent me. It is very probable that they were all true diphtheria. Among them there were some very severe cases. It is probable, then, that my statistics fall short of giving the best results obtained in Ashtabula in the treatment of diphtheria with the antitoxin. From the beginning of the epidemic on December 5, 1894, to January 1, 1895, there were reported at the Health Office (exclusive of the cases treated with the antitoxin) eighty-two cases of diphtheria with twenty deaths, a mortality of 24 per cent. The majority of these cases were examined bacteriologically by me, and the bacillus diphtheriæ was found in every case examined.

The Ashtabula epidemic is especially well adapted for a study of the comparative value of the antitoxin-treatment of diphtheria and the ordinary methods of treatment. The majority of the individuals affected were under very much the same conditions. They almost invariably sent for a physician on the first or second day of the disease. Their surroundings were in the main good, and the large proportion of the persons affected lived in good houses and were not crowded. Our experiences are in striking contrast for these reasons with those met in large city hospitals, drawing their cases from large tenement-houses and with their late admissions. To these circumstances, apparently, is to be attributed our relatively low death-rate in both classes of cases, 24 per cent. in those treated by ordinary methods and 7.5 per cent. in those treated with the antitoxin. Those of our cases coming under treatment after the third or fourth day had received a variety of local applications. In the majority of cases they had been treated with gargles or sprays of mercuric chlorid or of hydrogen dioxid. In all but a few cases the use of these remedies was abandoned at once on the administration of the antitoxin. The routine practice in the antitoxin-cases was to gargle or spray the throat every third hour during the waking hours with a solution of Seiler's antiseptic tablets or with a weak solution of boric acid. This was done merely as a precaution, for the sake of cleanliness and the mechanical effect. In some of the cases seen with Drs. Aldrich, Dickson and Flower, even this was omitted. We noticed no special difference in the time of the disappearance of the false membrane and in the convalescence of these cases than from those in which the washes were used. However, this was done as an experiment, and we would not advise the abandonment of these simple measures, which do no harm and may be the means of preventing severe mixed infections.

I have not found that the bacillus diphtheriæ disappears from the throat any earlier in the cases treated with the antitoxin than in those in which the remedy was not used. However, our experience is too small to draw conclusions from and is open to several sources of error. It was found impossible to have cultures made from the throats of convalescents each day, or even at short stated intervals. It was the rule, however, to quarantine the patients until their throats were proved to be free from diphtheria-bacilli.

I have records of thirty-one cases in which small doses of the antitoxin were given to individuals constantly exposed to diphtheria. Of these twenty-one were children, and of these ten had diphtheria. Five of them showed false membranes in their throats the next day after the injections. Of the rest, in two cases the false membranes appeared on the third day, in one on the fourth day, in one on the eleventh day, and in one on the thirteenth day after the injection. These cases were usually mild, and all recovered, yielding readily to small doses of the antitoxin. The usual dose was from 1 to 2 c.cm., according to the body-weight. Four cases received 8 c.cm., and of these none contracted diphtheria. At least ten of the immunized individuals developed urticaria in from two to ten days after the injection. In one case in fifteen minutes after the injection of 2 c.cm. of antitoxin into the right arm there were several severe attacks of sneezing, followed in a few minutes by an attack of asthma. Two hours later there was an intense outbreak of general erythema and urticaria, which lasted several hours.

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[1] Since this was written I have learned that there have been seventeen more cases, with one death, leaving the mortality for the whole series about 7 per cent.

RECENT IMPROVED METHODS IN INFANT-FEEDING, WITH ESPECIAL REFERENCE TO MODIFIED MILK.

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(Concluded from page 574.)

THE quantity of breast-milk can be determined by the condition of the breasts at nursing-time, *i. e.*, whether firm or flabby, and whether the child nurses a long time, say from thirty to forty minutes, before it is satisfied. Weighing the child several times on delicate scales, before and after nursing, gives a more accurate idea of the amount of milk received. The quality of the breast-milk may be excellent, and yet the nursling may be doing badly, as the quantity is insufficient. Now let us suppose that our efforts to continue the breast-feeding prove unsatisfactory and artificial feeding is imperative, how are we to modify cow's milk to make it equivalent in composition, reaction, etc., to breast-milk?

Average healthy cow's milk contains on analysis:

Fat	4 per cent.
Sugar of milk	4 "
Proteids	4–5 or more "
Ash	0.7 "
Total solids	13–14 per cent.
Total liquids	86–87 "

Such milk is slightly *acid*. It is *not sterile*, and the temperature and specific gravity vary, of course, depending on the conditions to which it has been subjected. Comparing this with the analysis of normal average human breast-milk, we find that the amount of fat is the same. In cow's milk the sugar-of-milk is *much less* and the proteids *much more*, and it possesses the further disadvantages of being *non-sterile*, *acid*, and of *uncertain temperature*.

It has often been recommended to use ass' or goat's milk as a substitute for mother's milk as coming nearer it in analysis, but, as neither is exactly like this, it is just as well, and perhaps better, to use and modify the more easily obtained cow's milk. "One cow's milk," which is so often recommended and used for infants, is ill-advised, for if that cow is sick or unwell from any cause the whole of her milk, a portion of which the child is to receive, is affected; whereas, if one of a herd is similarly affected, it will alter but little the total output of such a dairy in the relative proportion of its ingredients. Jersey and Alderney milk is too rich in fat for nursery purposes. "The milk of Durham, Ayrshire, Holstein-Friesien, American grades, and common native cattle, is the best for copying human milk."[1] It is with this milk, then, that we shall deal in considering the modified milk.

As I have said, it is the proteid or albuminoid in average cow's milk which is the ingredient that causes colic, vomiting, etc., in infants, when in excess, and it is this that we wish to reduce in copying breast milk. In other words, cow's milk is too strong in proteids (4 to 5 per cent. or more, instead of only 2 per cent.). The sugar-of-milk should be nearly doubled (from 4 per cent. to 7 per cent.), and the fat is to be kept as nearly the same as possible.

Obviously, then, it is easy to see, with these facts before us, what we shall have to do to modify cow's milk so as to make it approach as nearly as possible mother's milk in composition.

First of all, dilute to reduce the proteids or albuminoids one-half. Then add additional cream and sugar-of-milk to bring these up to their proper proportions. Neutralize with lime-water, and heat by means of a "pasteurizer" to 167° F., which will *not* decompose the sugar and the lime-water, *nor coagulate* the proteids, but will render the milk practically sterile, and we have a modified cow's milk approaching nearly in composition, etc., average human breast-milk. I use the word "heat" advisedly, instead of that much-abused word "sterilize," in regard to artificial feeding. Mr. Gordon, of the Walker-Gordon Laboratory, is my informant in stating that in the milk of one cow in twenty-four hours there is as much citric acid as one finds in an ordinary lemon, and that it too is destroyed by an indiscriminate elevation of the temperature to 212° F., or more for an indefinite time, as is done so commonly now with the Arnold sterilizer in general nursery use. By this high heating, then, the anti-scorbutic property possessed by the milk is lost. Mr. Gordon also stated that at that temperature (212°) *all the albuminoids are coagulated* and rendered more indigestible.

Rotch had cultures made of the unsterilized whole milk in six hours after milking, and it yielded 68,000 colonies per cubic centimeter of milk, but no cultures grew from either the whole or modified milk after heating to 167° F. Cultures of the lime-water showed that it too was sterile. Leeds found no coagulation of the albuminoids at 167° F., but *above that point coagulation occurs*.

Boston and New York are at the present time the only cities that possess the thoroughly scientific and practical Walker Gordon Laboratories or Dairies, where physicians may and do send their prescriptions for a milk of any desired analysis to be duplicated, just as one would have a recipe compounded at a druggist's. It is in part the purpose of this paper to make those physicians who are not already familiar with these laboratories and their methods to unite with those of us that are in creating a demand for this easily obtained "modified milk," so that we may persuade the Walker-Gordon Company to start a laboratory here. One has but to see the little crates of bottled "modified milk" daily left at the houses, ready for almost immediate use, to appreciate not only the convenience to the mothers, but the relief experienced by the physicians as expressed by them of "knowing that the milk is as it should be." Until we have such a laboratory a few formulæ for modifying milk in the household may not be amiss.

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[1] Rotch: Boston Medical and Surgical Journal, vol. 129, p. 505.

In passing, it is to be noted that the cream of ordinary dairies varies in fat from 15 to 30 per cent., but in the laboratories a constant cream of 16 per cent. fat is obtained by a Stockholm separator.

It should also be carefully remembered that cane-sugar is *not* to be used to sweeten the milk, as it ferments and causes colic, but that sugar-of-milk alone is to be employed.

Now, how are we to add the ingredients of cow's milk so that they will be in the proportion of fat 4 per cent., sugar-of-milk 7 per cent., and proteids 2 per cent. of mother's milk? Perhaps the most convenient, though not absolutely accurate, very simple method is the following: Determine the number of feedings the child is to have in the twenty-four hours and the amount to be given at each feeding; from this calculate the total amount of milk to be used throughout the day. Let this be made up as follows:

$\frac{1}{4}$ of the total 24 hours' supply to be cream.
$\frac{1}{8}$ " " " " skimmed milk.
$\frac{1}{16}$ " " " " lime-water.

Boiled or distilled water is to be added to make up the total. Rotch has found experimentally that $3\frac{3}{8}$ drams of powdered sugar-of-milk are the requisite amount to be added for each eight ounces of the modified milk to make it equal the sweetness of human breast-milk. He also found that adding lime-water in an amount of from $\frac{1}{20}$th to $\frac{1}{16}$th of the whole bulk was sufficient to neutralize average cow's milk or render it slightly alkaline. Take a case, for example: A child six weeks old, with feedings every two-and-a-half hours, or eight feedings in the twenty-four hours, of two ounces each, which makes a total of sixteen ounces for the day, then we have:

$\frac{1}{4}$ of 16 to be cream	f℥iv.
$\frac{1}{8}$ " " skimmed milk . . .	f℥ij.
$\frac{1}{16}$ " " lime-water	f℥j.
Remainder, boiled water	f℥ix.

A measure that holds exactly $3\frac{3}{8}$ drams of powdered sugar of milk is sold by the Walker-Gordon Laboratory in Boston, and for the case in point we should add two of these measurefuls to increase the sweetness sufficiently. Divide then our modified milk between eight bottles, and our day's supply is ready to be heated to 167° F., *i. e.* "pasteurized."

The "pasteurizer" consists of a block-tin kettle and top not unlike the now familiar Arnold sterilizer, but without the additional cover and the pan beneath for the boiling-water. Within this kettle a rack rests for holding the requisite number of tubular nursing-bottles (this shape has been found advantageous for uniform heating), and into each of which is put the required quantity of the "modified milk" for a single feeding. These bottles are plugged with cotton, as is done in ordinary sterilization. The kettle is filled with water to the height of the milk in the bottles, unlike what takes place in the Arnold apparatus, in which steam alone reaches the bottles. The tin lid is then put on the kettle, and through an aperture in it is put a Fahrenheit thermometer. The whole is then placed on a stove or over a lamp and heated to 171° F., when it is removed from further heating, but wrapped in a thick blanket (or especially-made cover) for half an hour, when "pasteurization" will be complete, as a temperature of nearly 167° F. will have been maintained for that time.

Just before feeding the following directions are to be given: Place a bottle of the milk in the specially provided nursery cylinder in tepid water, and gently heat it until the temperature of the milk is from 98° to 100° F. Use the thermometer to test the temperature of the milk, keeping the cotton stopple in the bottle until the milk is nearly warmed. After "pasteurizing" the bottles of milk should be kept in a cool place. After use rinse the bottle immediately in *cold* water, and before refilling boil it in a 1 per cent solution of sodium bicarbonate. It should be added that only boiled, distilled, or sterilized water is to be added to the milk.

If an infant is delicate or of feeble digestion, less skimmed milk is to be used, and also the cream may be reduced a little as the judgment prompts one. In the case of sick children increase the lime-water. If diarrhœa exists, boil the milk if necessary.

Perhaps a few words may not be amiss now in regard to the Walker-Gordon Laboratories and Dairy Farms. Several physicians are especially interested in the one in Boston, and at their head is Dr. Rotch, to whose untiring efforts we are chiefly indebted for this scientific method of infant-feeding.

"The farm and herd are under the absolute control of the laboratory, and are used for laboratory-purposes only; the cows, their food, their stables, their pasture and their drinking-water are subjected to the frequent, paid, critical examination of the best veterinary surgeon that can be procured in Boston."[1] The dairymen dress in white suits before milking, having each previously had a bath. "The cows are milked into glass pails, and the milk, after being aërated and cooled to about 44° F. in a tank of ice and water, is delivered at the laboratory in

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[1] The Value of Milk Laboratories, etc. Rotch. Archives of Pediatrics, vol. x.

Boston within four hours of the milking." The average and almost stable analysis of this original milk shows a percentage of:

Fat	3.90
Sugar-of-milk	4.30
Proteids	4.00
Mineral matter	0.65
Total solids	12.85
Total liquids	87.15
	100.00

At the laboratory a ventilating engine keeps up a constant change of air, and a hose keeps the enameled-brick walls and stone floors wet, to prevent any remaining dust from contaminating the milk while it is being "modified."

The whole milk, after being "pasteurized," passes through a Stockholm separator, which makes 6800 revolutions a minute, and yielding a cream of an almost constant 16 per cent fat. It not only does this, but it removes all dirt that from unavoidable causes has gained access to the milk, thus yielding a clean, skimmed milk practically free from fat (only 0.13 per cent. remaining).

The modifier has as a result stable component parts of the original milk to work with, made up by analysis as follows:

	Fat.	Sugar.	Proteids.
Cream giving	16.00	4.00	3.60
Skimmed milk giving	0.13	4.40	4.00

A 20 per cent. solution of sugar-of-milk, freshly prepared every day with distilled water, is used to raise the percentages of sugar. The mineral salts are ignored or allowed to take care of themselves.

When a formula is received at the laboratory from a physician the prescription is copied by a clerk in a book for that purpose, and which is always open to the prescribing physician's inspection. The milk-modifying clerk picks up a basket with as many compartments as meals are ordered, and fills each compartment with a tubular bottle holding the number of ounces ordered for each feeding. After mixing the ingredients *en masse* as ordered, each bottle is filled and the basket passed to the stoppler, who plugs each tube with cotton. The whole is then "pasteurized" for half an hour after being carefully labelled. The basket of milk is then ready for delivery. The delivery-wagon is divided into two compartments; the back, which is lined with zinc and easily cleaned, is for the fresh milk and baskets and the front for soiled tubes, baskets, etc., which are sterilized at the laboratory before being taken into the "modifying-room."

Some of the more usual formulæ received at the laboratory may be useful and of interest.

For a premature baby of the very weakest digestion:

Fat,	1.00, cream 16 per ct.	f ℥vj.
Sugar,	5.00, 20 per ct. sugar-of-milk solution	f ℥ijss.
Proteids,	0.50, skimmed milk	f ℥vj.
Lime-water,	$\frac{1}{12}$	f ℥j.
Distilled water		f ʒvij.

Twelve feedings of 1 ounce each.

For the same child when a little stronger:

Fat,	2.00, cream 16 per cent.	f ℥ijss.
Sugar,	6.00, milk-sugar solution 20 per cent.	f ℥v.
Proteids,	1.00, skimmed milk	f ℥ijss.
Lime-water,	$\frac{1}{20}$	f ℥j.
Distilled water		f ℥ix.

Ten feedings of 2 ounces each.

For a fairly strong child, from 2 to 5 months old:

Fat,	4.00, cream 16 per cent.	f ℥viij.
Sugar,	7.00, milk-sugar solution 20 per cent.	f ℥ix.
Proteids,	1.00, skimmed milk	f ℥j.
Lime-water,	$\frac{1}{16}$	f ℥ij.
Distilled water		f ℥xij.

Eight feedings of 4 ounces each.

For a strong child, from 5 to 8 months old:

Fat,	4.00, cream 16 per cent.	f ℥xij.
Sugar,	7.00, milk-sugar solution 20 per cent.	f ℥xijss.
Proteids,	2.00, skimmed milk	f ℥ix.
Lime-water,	$\frac{1}{20}$	f ℥ijss.
Distiled water		f ℥xij.

Eight feedings of from 6 to 7 ounces each.

For a child 6 years old with duodenal jaundice:

Fat,	0.50, cream 16 per cent.	f ℥iss.
Sugar,	6.00, milk-sugar solution 20 per cent.	f ℥vij.
Proteids,	4.00, skimmed milk	f ℥xxxiijss.
Lime-water,	$\frac{1}{10}$	f ℥v.
Distilled water		f ℥j.

Twelve feedings of 4 ounces each.[1]

This last case was reported by Dr. Rotch as one of rapid recovery with no medicine.

If all milk is bad, or none is to be obtained (as was the case in the recent blizzard) for some days, we shall be obliged to fall back on condensed milk. Of the various brands, perhaps the Anglo-Swiss is the best. This gives on analysis:

Fat	0.75
Cane-sugar	6.00 to 7.00
Proteids	1.00

To every teaspoonful of this condensed milk add ten teaspoonfuls of boiling water. This is not good for sick children, on account of the cane-sugar it contains. To increase the percentage of fat use cream or oil in some form, such as cod-liver oil.

Barley-water, rice-water, and oatmeal-water are of no service in the supposed "breaking up of the coagulum of casein" in infants' stomachs, and may in fact be detrimental, and their use is a practice that should be discarded for the more modern, exact, and scientific methods.

In conclusion I shall give a brief table that has been useful as to the amount and frequency of feeding for the different ages:

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[1] Feed every two hours.

Age.	Hours interval.	Number of feedings in 24 hours.	Ounces in each feeding.	Total ounces for 24 hours.
1st week	2	10	1	10
1st to 6th week . .	2½	8	1½–2	12–16
6th to 12th week . .	3	6	3–4	18–24
6th month	3	6	6	36
12th month . . .	3	5	8	40

In baby-feeding begin at 6 A.M. and extend to 10 P.M. During the first month give two feedings through the night. After the first month and to the sixth month give only one. After the sixth month discontinue the midnight meal. *Boiled or sterilized water should be given between the feedings.*

Before closing I wish to express my thanks to Dr. John Dane, of Boston, for his kindness in making me familiar with the methods there used for modifying milk.

I trust these methods may meet with the approval of the profession here, as they have in Boston and New York, and that we may soon have a Walker-Gordon laboratory, which is the only one conducted on the scientific principles I have mentioned. Such a laboratory would be a help to the busy physician as well as to the mother, and a blessing to the offspring of the rich, the ignorant, and the poor.

2000 MARYLAND AVENUE.

TREATMENT OF MALIGNANT TUMORS WITH THE TOXINS OF THE ERYSIPELAS STREPTOCOCCUS AND THE BACILLUS PRODIGIOSUS.[1]

BY JOHN B. ROBERTS, A.M., M.D.,
OF PHILADELPHIA.

THE proper treatment for all malignant tumors is early and radical removal. A medical man, who directly or indirectly encourages a patient with an operable malignant growth to postpone operative extirpation is guilty of the gravest professional error. If he is not sure of the character of the suspicious growth, it is his duty to insist upon examination by some one experienced in the diagnosis of such lesions. If the patient declines to allow investigation by a more experienced physician, it is his duty to decline to continue in charge of the case. Many women and men are dying in this State to-day from incurable malignant tumors, because in the early stage of the disease they placed their trust in unworthy medical attendants who were too ignorant, too careless, or too complaisant to say: "Have this tumor removed at once." Tumors in regions frequently the seat of malignant disease should always be regarded with suspicion. Delay in having the diagnosis established by competent authority should not be tolerated. The diagnosis of a malignant or probably malignant growth should be followed by prompt and thoroughly radical excision. Very rarely powerful caustics may with propriety be substituted for the knife. Cauterization is, however, very seldom judicious; and the patient is liable to suffer more during treatment by caustics than after excision with the knife.

The procrastination of patients and the improper advice of ignorant doctors frequently result in precious time being lost. The malignant growth then becomes so extensive that extirpation is impracticable. It may happen also that virulence of the disease or delay in its removal results in its return at the seat of operation. Further operation may then be impracticable without sacrifice of the patient's life. Under these circumstances it is proper to resort to hypodermic injections of a mixture of the toxins of the erysipelas streptococcus and the bacillus prodigiosus. It is not justifiable to adopt this line of treatment in place of early and radical excision. *The cure of malignant disease is the knife, used early and used thoroughly.* In inoperable cases the toxins may be tried, though not much benefit has been proved to result from their administration. As a last resort the patient should, however, be given the benefit of the doubt, because a few cases of benefit and apparent cure have been reported.

We are indebted to Coley, of New York, for proposing this method of treatment. He was led to undertake the investigation by observing the benefit accruing from an accidental attack of erysipelas in a patient suffering with recurrent sarcoma. Those interested in the details of his study will find much to attract attention in his successive articles.[1] He first employed fluid cultures of the living germs of erysipelas for the purpose of producing an attack of erysipelas; but he soon abandoned this method because of the risk to the patient, the difficulty of producing erysipelas, and the belief that the benefit derived was due to the toxic products of the germs. The germs were therefore killed by heat and filtered out of the cultures before the hypodermic injections were made. The patient therefore received the chemic products or toxins of the germs without running the risk due to the presence of the living micro-organisms.

Laboratory observation has shown that the bacillus prodigiosus has the power of increasing the virulence of the streptococcus erysipelatosus. It therefore occurred to Coley that a combination of the toxins of the two germs might be more advantageous. He tried this as a next step, and now believes that hypodermic injections of the combination have cured a number of cases of malignant disease, which were too extensive to be removed by operation.

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[1] Read before the Medical Society of the State of Pennsylvania, May 21, 1895.

[1] American Journal of the Med. Sciences, May, 1893, and July, 1894; New York Medical Record, January 19, 1895.

His present method of preparation is as follows:

> "To make the toxins of erysipelas and the bacillus prodigiosus ordinary peptonized bouillon is put into small flasks containing from 50 to 100 cubic centimeters, which after proper sterilization are inoculated with the streptococci of erysipelas and allowed to grow for three weeks at a temperature of from 30° to 35° C. The flasks are then inoculated with bacillus prodigiosus, and the cultures allowed to grow for another ten or twelve days at room-temperature. At the end of that time, after being well shaken up, the cultures are poured into sterilized, glass-stoppered, one-half ounce bottles, and heated to a temperature of from 50° to 60° C. for an hour, sufficiently to render them perfectly sterile. After cooling a little powdered thymol is added as a preservative, and the toxins are ready for use. The toxins when prepared in this way are very much stronger than when filtered through a Pasteur, a Chamberland, or a Kitasato filter. . . . If, as is sometimes the case, the preparation is found to be too strong for use with safety, it can be diluted with glycerol or sterilized water.
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> "The method of preparing the bouillon in which the bacteria are grown is identical with that in ordinary use, except that it is always made from meat and is not necessarily neutralized, the acid reaction normal to the meat-bouillon being better for the growth of the erysipelas coccus.
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> "In order to keep up the virulence of the cultures they are put through rabbits in the following way: The hair of the ear is clipped close with a pair of scissors, and the skin washed with weak carbolic acid and then with sterilized water. A minute quantity of bouillon-culture, forty-eight hours old, is then injected subcutaneously in four or five different places in the ear. Forty-eight hours later, after again washing the ear with carbolic acid and sterilized water, a flat needle, sterilized in the flame, is inserted under the skin at or near the point of inoculation, and the layer of the skin cut off with a sharp sterilized scalpel. The piece of skin is then rubbed well over the surface of an agar-tube with a thick platinum wire needle. After twenty-four hours in the incubator the colonies of streptococci will show as minute white specks, and from them a pure culture can be obtained. If the agar is made with 75 per cent. of bouillon and 25 per cent. of urine, the streptococci will grow more freely than if bouillon alone is used.
>
> "The dose varies from one to eight minims, and causes a distinct febrile reaction."

The treatment then, it will be understood, consists in using as a remedy for sarcoma and carcinoma hypodermic injections of the chemic substances produced by the germ of erysipelas when growing in bouillon in company with the bacillus prodigiosus. The erysipelas streptococcus and the bacillus prodigiosus are killed by heat after they have grown together, but their dead bodies are not filtered out as they were in Coley's former method. The germs, being dead, cannot cause erysipelas in the patient. They are simply used as manufacturers of the complex chemic substances that are employed as the remedy. These chemic substances and the dead germs remain in the bouillon which was used as a culture-medium.

The dose of this remedy, which is bouillon containing the dead germs and their products, is from two to eight minims given hypodermically every day or every other day. The injections are preferably made into the tumor or into the surrounding tissues; but they may be made in other parts of the body, if for any reason the former situation is undesirable. The effect of the medication is to cause the patient to have shortly after administration a temperatue of from 102° to 104°. This is a symptom that the surgeon desires to obtain, for it shows that a constitutional effect has been produced. It is best to begin with a dose of one or two minims, and increase gradually as the patient becomes more accustomed to the remedy. If the depression due to the toxins is very great, they should be given not every day, but every two, three, or four days. Patients become tolerant or immune to the effect of the toxins. One of my patients was given a violent diarrhea for an hour or more, a moderate chill, and a temperature of 103° by an initial dose of one minim. Two days later very little effect was produced by another dose of one minim. Subsequently I had to increase the dose to fifteen minims before obtaining any considerable rise of temperature.

The effects of the toxins upon malignant tumors, when satisfactory, is said to be a cessation of growth, followed by absorption, or disintegration and discharge. Some reported cases of cure have been brought about in one way, some in the other.

Coley does not seem to be carried away with enthusiasm when he reports his results, but speaks in the manner of a scientific observer seeking truth. In his paper published January 19, 1895, he refers to a total of thirty-eight cases of inoperable sarcoma treated with living cultures of erysipelas or mixed toxins. He says that nine of these cases "promise to be permanently successful." He uses the words "promise to be permanently successful" because, although the tumors disappeared, the time after their disappearance was at the date of the report not in any case over six months. One of the nine patients was treated with the living cultures of erysipelas; the remaining eight were treated by the mixed toxins.[1] In carcinoma he had had no cure out of nineteen cases, but thought that the injections had an undoubted retarding influence upon the growth of the tumors.

Coley suggested that it would be well to use the toxin treatment in cases in which recurrence is likely to take place after operative removal. If the remedy has an inhibitory power, it is certainly rational to employ it before the malignant disease gives macroscopic evidence of its return.

My personal experience has been limited to three cases, all of them treated within the past six months. There has been no benefit, though in one case I at first thought the rapidity of growth was being checked.

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[1] See also New York Medical Record, April 27, 1895.

The first case was a man of forty-five years, with a large ulcerated epithelioma of the lower lip and chin of two years' duration. I used mixed toxins from which the germs had been filtered. The first injection of ♏xx caused the temperature to rise to 104°. The next day the same dose caused the temperature to rise to 105.2°, and the man had a chill lasting twenty minutes. In the course of twelve days he received eight injections, each of twenty minims. No benefit was manifested in the local condition; but the man became very weak. He died about three-and-a-half weeks after the treatment was discontinued. It seemed to me that the end was probably hastened by the depression due to the use of the toxins. He was in good general condition when the treatment was begun.

Dr. Coley calls attention to the depressing effect of the treatment and uses stimulants to counteract it. He advises the treatment to be discontinued if no benefit is evident within two or three weeks.

The second case I saw in consultation with Dr. M. V. Ball, who had amputated the man's foot for spindle-cell sarcoma of the right heel. There was, when I saw him, a mass of sarcomatous glands in the groin extending under Poupart's ligament into the pelvis. I obtained the same preparation as Dr. Coley now recommends; that is, the toxins without the germs having been removed by filtration. Dr. Ball, who had charge of the patient, began with three-drop doses and produced chill and a temperature of 104°. The dose was later increased to six drops. The tumor became soft and assumed an inflammatory appearance, and an active lymphangitis and phlebitis extending down to the knee occurred after the injections. The man seemed to lose strength rapidly, so that the interval between doses was increased. The treatment was persisted in for some weeks, but no benefit resulted. Continuous fever became a feature of the case, and the local inflammatory symptoms did not disappear.

The third patient was a boy of nineteen years of age, from whom I removed a spindle-cell osteo-sarcoma arising from the inner surface of the left ilium. A month later it became evident that the growth, which, because of its location could not be radically extirpated, was involving the ramus of the ischium and pubes as well as the ilium. Seven weeks after the operation the mixed toxins, as used by Coley, were employed hypodermically. The initial dose was one minim. The result was a chill, a temperature of 103°, a pulse counting 132 per minute, and a violent diarrhea. Two days later another injection of one minim was given. It produced very slight symptoms.

In the course of four weeks the boy had received eight injections. After the first dose the reaction was almost negative under increasing amounts until fifteen minims were given, which caused the temperature to rise to 104°. This was the seventh injection. The eighth injection of fifteen minims given six days later caused a temperature of only 100.2°. The immunity apparently produced by one minim seems strange. The patient was given no other treatment except occasional anodynes at night until a few days before the injections were stopped; then iron, quinin, strychnin, and whisky were ordered.

At first I thought that the rapidity of the growth was diminished and the tumor becoming softer; but this was probably an error. Later it continued to grow, and the patient left the city for his home in the country.

It is interesting to know that Coley has found osteo-sarcoma less amenable to the toxin-treatment than other forms of sarcoma.

At the recent meeting of the American Medical Association in Baltimore, Dr. Senn reported to the Surgical Section a number of cases of malignant disease treated by him with the toxins of erysipelas without success. Dr. Keen has also reported a similar want of benefit in cases under his care. On the other hand, Tilly, Moore, Kreider, Rumbold, Johnson, and others have reported favorable results. The evidence is, therefore, to a certain extent conflicting. It seems pretty certain, however, that there are cases in which the toxin-treatment has retarded the malignant process and even cured the patient. These few successes compel us to test the method in all inoperable cases, for it holds out the only hope.

THE TREATMENT OF FISTULÆ IN ANO BY LANGE'S METHOD DF IMMEDIATE SUTURE OF THE TRACT.[1]

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THE reason for presenting this paper is an experience that justifies me in expressing an opinion of Lange's method of treating *fistulæ in ano* that is contrary to the unfavorable opinion of it held by the general surgeon, and, in fact, by some rectal specialists. I take it that the condemnation of this operation is due to a misconception of its scope or range of applicability, rather than to a failure to accomplish the desired results in suitable cases. Fistulous tracts running high into the bowel should not be treated by this plan, but in the majority of instances the sinuses are confined to the lower inch or so of the bowel. In such cases the technique to be described will often materially aid the healing process.

An inflexible rule to follow in all cases of *fistulæ in ano* cannot be given, as each case requires individual study and treatment.

Briefly stated, the method of treating the disease in question, as suggested by Dr. Frederick Lange, of New York City, consists in the excision of the entire fistulous tract, and the apposition of the wound by buried sutures of catgut, in order to secure healing by first intention. Strict antiseptic precautions are of course observed. In my own practice, for the past two years, I have pursued this treatment, with a few modifications, in nearly all the cases coming under observation that required operative interference. In no instance was there occasion to regret its employment. In those cases in which primary union was not secured the immediate suturing of the fistulous tract prevented hemorrhage and lessened pain, the pain being occasioned sometimes by the packing of the sinus when sutures are not employed. Frequently a portion of the wound healed by first intention, and shortened that much the period of convalescence.

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[1] Read before the Medical Society of the State of Pennsylvania, May, 1895.

The special points in the operative technique that I follow are as follows : The sphincter muscles are thoroughly stretched. Instead of attempting to excise the entire fistulous tract or tracts, the wall of the incised fistula is thoroughly curetted, and the edges of the sinus are removed if at all indolent. Bleeding, if profuse, is temporarily controlled by torsion of the vessel, or by the application of hot-water compresses. Silkworm-gut sutures are inserted in a similar manner to that employed in repairing a lacerated perineum, the sutures being passed at intervals of half an inch and about a quarter of an inch from the edge of the wound. It is a buried suture, that is to say, no portion is exposed within the sinus. After all the sutures are inserted they are tied with a single surgeon's knot.[1] The ends of the gut should not be cut short, as they are liable to stick into the flesh. The tension exerted by the suture must not be excessive, only sufficient to bring the raw surfaces into accurate apposition. When more force than this is employed the wound is puckered, and healing is either prevented or seriously retarded. Superficial sutures are used wherever the skin or mucous membrane is not closely united, especial attention being paid to this, in order to prevent the entrance of fecal or foreign matter, which, should it occur, would prove disastrous to primary union. When the operation is completed a suppository of ten grains of iodoform, or five grains of aristol, is inserted into the bowel, and some of the dry powder is sprinkled over the external parts. A liberal supply of gauze and cotton and a T-bandage complete the dressing. No opium is given, if it is possible to avoid its use. The bowels are moved on the third day by the administration of small doses of calomel and sodium bicarbonate, followed by a saline. Immediately preceding the fecal movement an enema of six or eight ounces of olive-oil is given. This lubricates the parts and softens the stool. Patients are kept in the recumbent position from ten days to two weeks, the length of time being proportionate to the extent and depth of the lesion. Tuberculous subjects improve most rapidly when not confined to bed longer than absolute prudence demands.

During the healing process two points require the surgeon's attention, *the burrowing or formation of fresh sinuses* and *the onset of pain.*

The development of burrowing, or the formation of fresh sinuses, is generally indicated by the sudden appearance of an increased amount of purulent discharge, or by an induration of the tissues about the site of the former fistula. Upon discovering the seat of trouble the requisite number of sutures should be removed, and any adhesions that interfere with the wound healing from the bottom should be broken down with a probe so as to allow free drainage, and the tracts should be kept perfectly clean by frequent syringing with hydrogen dioxid, or some other antiseptic and pus-destroying solution. If a new sinus has formed, it should be opened at once.

Regarding the appearance of pain, Allingham[1] states: "Always encourage your patient to tell you directly he has any pain in or near the healing fistula ; never make light of his complaints ; often he will be the first to discover, by the existence of some unpleasant sensation, the commencement of a small abscess or sinus, and will be able also to indicate its situation."

Unless otherwise indicated, the sutures are removed within ten days or two weeks ; frequently a few are taken out within a week. It is best, however, to err on the side of leaving them in too long.

In conclusion, I would state that, having given this operation a fair trial, I am inclined to consider it of decided advantage in the treatment of many cases of *fistula in ano.* Even if primary union is not obtained, the patient will be in the same position as if no attempt had been made to secure it ; whereas, if healing ensues, the gain is a very considerable one.

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CLINICAL MEMORANDUM.

GONORRHEAL SALPINGITIS, OPERATION, RECOVERY; RUPTURED TUBO-OVARIAN ABSCESS, OPERATION, DEATH.

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Case I.—The history in the first case I report herewith was that the patient, a woman, had been married several years and had given birth to two children, the youngest three-and-a-half years old. At this labor, or at the previous one, she suffered a laceration of the cervix, and also a laceration of the perineum. There was no history of any puerperal trouble whatever. She began complaining of pain after the birth of the last child ; she had been a perfectly healthy woman previous to that time, and the symptoms were in all probability due to extensive laceration of the soft parts. To remedy this an operation was performed upon the perineum about sixteen months ago. She, however, found no relief, and gradually grew worse after the operation on account of imbedded sutures in the perineum. She was afterward operated upon by my friend, Dr. Wathen, who removed the sutures and sewed up the lacerated cervix. Relief followed this operation and the woman was regaining her health until about five months ago, when she had a specific vaginitis, from what source I do not know. This vaginitis was very severe, there being a great deal of discharge, and the disease extended rapidly into the cavity of the uterus, and also through the tubes, infecting the peritoneum within two or three weeks, as I think, after she began complaining. At this time she had a great deal of abdominal tenderness, slight at first, gradually increasing in intensity, and finally becoming localized over both ovarian regions; I saw the woman through the kindness of Dr. Wathen after she had been ill for two or three weeks. At the time I first saw her there was a decided enlargement about the size of my fist in the left broad ligament. Shortly afterward she became demented; whether this was an example of "true dementia" or not I am unable to say; she had, at least, hallucinations and delusions; she did not recognize any one, and it was almost impossible to keep her in bed; never to my knowledge did she have a lucid interval during a period of seven weeks. During this time the pulse was very rapid, reaching 150 or 160; the temperature, however, was never much above 100°, varying from 99° to 100° and a fraction. Emaciation followed rapidly, so that within a few weeks her previous weight of 120 or 125 pounds was reduced to not more than 75 or 80 pounds. For a long time I thought she would die, and so told her husband. However, she finally began to rally under strychnin, with stimulants, and the local application of heat and hot vaginal douches.

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[1] I am indebted to Dr. B. F. Baer, of this city, for the suggestion to use silkworm-gut in these cases, and likewise for the information that a single surgeon's knot prevents any danger of this material slipping.

[1] Diseases of the Rectum, fifth edition, London, 1888, p. 54.

She continued to improve until February 23d, when she was in a condition we thought favorable for an operation. An examination at this time showed that the mass in the pelvis had almost entirely disappeared. In the right side, where the large tumor was previously felt, there was now not much induration; in fact the enlargement was greatest on the left side. The uterus was enlarged and retroflexed, being fixed firmly in the cul de sac. We expected to find considerable pus in the tubes.

At the operation we found a true parenchymatous inflammation of the tubes themselves, with extensive adhesions, localized peritonitis about the tubes, and a great many adhesions between the tubes and the peritoneum, and also between the ovaries; the fimbriated end of one tube was adherent to the uterus; both the tubes were enucleated, and there was very little pus, only a few drops, coming from each one. Dr. Cashin, of the City Hospital Resident Staff, made the bacteriologic examination, and found the streptococcus pyogenes albus in pure culture. Since the operation the woman has had no rise of temperature, and the pulse has not been above 96, and this just a few hours after the operation was completed. We expect that she will do uninterruptedly well.

An interesting point about this case is that we are able to trace the inflammation directly, and to follow it up in its passage through the uterus into the tubes. Another is the apparently small amount of damage that had been done locally, the adhesions not being very dense, and there being no other change, except the increased thickness, with little pus—a true parenchymatous inflammation of the tubes.

As to the operation, had we been able to diagnosticate accurately the condition that existed, these tubes and ovaries might have been easily removed by an operation that is now becoming popular with some operators, through the vagina, the uterus being removed, if necessary, at the same time. However, we were not able to recognize this condition previous to operation, as we are unable to do in many cases.

CASE II.—The woman in the second case gave the following history: She was twenty-six years old, and stated, when coming into the hospital, that she had been taken sick with an acute pain radiating from the left hip to the umbilicus. A great deal of pain and tenderness had previously been noticed in the right iliac fossa. Later the pain became more general, more localized at first in the epigastric region, remaining localized there for a period, and then spreading over the entire abdomen. At the time of entering the hospital the temperature was 103°, the pulse-rate 120, and there was a great deal of abdominal distention; the tympanites, the interne tells me, was markedly less in the right iliac fossa, where he thought he was able to obtain a flat percussion-note. He also thought he detected a tumor in this region. The woman denied absolutely ever having had coitus, and no vaginal examination was made. She was sent to the medical ward, the diagnosis of suppurative appendicitis having been made; it was the hope that by medical treatment she could be relieved without surgical interference. She was given small doses of opium, which, together with local applications, brought the pulse down to about normal, and the temperature to 99.8°.

The following morning when the interne made his usual round he found the woman with a pulse that was imperceptible, covered with a cold, clammy perspiration, and with all the characteristic symptoms of shock. He at once diagnosticated a rupture probably of the appendix, and being unable to obtain Dr. Wathen by telephone he sent for me. I advised an immediate celiotomy, stating that I did not believe it was an instance of ruptured appendix, basing my opinion upon the fact that the pain had not been sufficiently localized, and also that upon making a vaginal examination I found a very large ulcer on the floor of the ostium vaginæ. I found the vagina and uterus filled with stinking pus. I made the statement that I did not think there was a ruptured appendix, but probably that the tubes had been infected with rupture of a tubal abscess, which was most likely the cause of the trouble. I recognized the fact, however, that we might have an instance of appendicitis, or of many other things, *e.g.*, extra-uterine pregnancy, rupture of the gall-bladder, or other suppurative troubles about the abdomen or pelvis. The symptoms were too obscure to determine definitely.

Under stimulants the woman rallied sufficiently to understand her condition, and was told that an immediate operation offered the only hope of relief. She accepted this, and the operation was performed in the afternoon of the same day. She went on the table with a very good pulse, and stood the operation fairly well. In making an incision we found the omentum very black and adherent in front to the abdominal wall.

Carefully separating the adhesions upon the left side first, I found that they were not very dense, being comparatively slight and very superficial. In attempting to pass my hand above I probably caused some pressure, and there was a rupture through the omentum and a gush of about a quart of very offensive nasty pus. I immediately passed my finger down in the right iliac fossa and found a large tumor high up, about the position of the caput coli. I was not able, however, to detect the appendix nor to make out anything very distinctly. The uterus was felt imbedded in adhesions and immovable, as had been demonstrated by vaginal examination before the operation. The cavity was thoroughly irrigated with many gallons of water, and gauze drainage was packed in between the intestines wherever it was possible. The woman rallied fairly well from the operation, but died at one o'clock the same night, nine hours after the operation.

The post-mortem examination showed that there was on the right side a large ovarian abscess which communicated with the tube, in which there was a rupture just at the junction of the tube with the uterus. This communication had been established, as shown by an abscess in the broad ligament, probably by a rupture at this point, primarily into the broad ligament. By gently pressing the tube near the ovary, pus would escape into the cavity, thus showing how the extensive contamination took place. The other tube and ovary were in about the same condition and were filled with pus. The uterus was also filled with pus of the same character. Cultures were made from pus from the abdominal cavity, and also from pus that came from the ovary, and from that coming from the tubes. In all the staphylococcus pyogenes aureus was found. I think this was a case of staphylococcous infection, and both cases reported were evidently of specific origin, at least venereal in their origin. I believe infection to have been produced in the latter case by the chancroidal ulcer which the woman had presented. I have seen one other case in which a chancroid was undoubtedly the cause of pyosalpinx. In the other case the chancroid was situated on the cervix.

I would like to hear some of the gentlemen discuss the low operation in such cases as the first one reported, if we were able to determine the exact condition existing.

Dr. W. H. Wathen said: The first report is interesting to me because I have followed the history of the case for probably six or eight months, having operated upon the patient then for the removal of some silkworm-gut sutures, which were buried in the perineum and had been causing intense pain, and also for a lacerated cervix. The case, as reported by Dr. Frank, is correct, and when I referred the patient to him four months ago she was then apparently insane. I saw little more of her until a few days ago when I assisted Dr. Frank in the operation. The operation by the vaginal route for the removal of the ovaries and tubes I do not think could have been performed, because the adhesions were very extensive, and we would have had great difficulty in separating the ovaries and tubes sufficiently to have brought them down through the opening made into Douglas's pouch, then ligating, and removing them. This case, however, could have been treated by the vagina easily if we had performed a hysterectomy. There has been a great deal written during the last year emphasizing the advantages of the vaginal method over the abdominal method in the removal of pus-tubes, usually performing a hysterectomy at the same time; some distinguished operators claim that this is by far the better and safer operation. I have read the reports carefully, and there is almost a universal conclusion by French surgeons in favor of the vaginal method. It is easy to understand that the vaginal method is better if there are no large accumulations of pus, and if there are no intestinal adhesions, provided the uterus is removed at the same time; but no one can possibly diagnosticate intestinal adhesions, or their extent, until the abdomen is opened, and we come in contact with the adhesions. I have had several illustrations of that, and I have recently operated upon patients when I do not believe it would have been possible to remove the ovaries and tubes, and to separate the intestinal adhesions, even if I had taken out the uterus, because they were so extensive; and if an attempt had been made to separate the adhesions the intestines would probably have been badly injured and the patient would have lost her life. For the reason that we are unable to diagnosticate intestinal adhesions, I do not believe the vaginal method can take the place of the abdominal method in all cases. And the vaginal method of operating when the uterus is not removed, and even if the uterus is removed, is sometimes, I am sure, a very imperfect method, because there are extensive adhesions that cannot be separated. If, in an effort at separation of the adhesions, the omentum is torn and an opening left in it, we may not detect it, and it is left to cause after-trouble. The vaginal method, if we remove everything, including the uterus, and separate all adhesions, is certainly the better method, if we recognize, as is now claimed by many operators, that when one removes pus-tubes on both sides, taking out the ovaries and tubes, the uterus ought also to be removed.

Another interesting point is that in an examination of the pus no gonococci were found. That might be urged against the specific origin of the trouble, but bacteriologists who have made frequent examinations of pus from tubes that have been shown to be of specific origin have often failed to find gonococci; and the longer a case has existed the less certain are we to find these bacteria. They were present at first, and probably could have been found in the tubes during the early inflammation, but were finally destroyed.

I know very little of the history of the last case except as it has been reported to-night, and when the woman was admitted to the hospital the disease had progressed too far for any relief to follow operative measures; but I am a little surprised that such a case should have been put in the medical ward, for there is nothing in the history, and nothing in the post-mortem examination, to show why it should have been a medical case. This case brings out the point that general physicians often complain that the surgeon wants to get hold of cases of appendicitis, etc., when they belong legitimately to the general physician. In this instance if the specialist had been called a few weeks before the patient died he could at once have detected the trouble, and probably an operation would have relieved her.

I was recently called to see a woman who had been treated for six weeks by one of the best physicians in this city, one who is often called in consultation. In a digital examination, without the least difficulty, extensive pelvic trouble was diagnosticated. An operation was performed, and now the woman is relieved of her trouble. I think there ought to be no conflict between the general physician and the surgeon, but if there were a constant interchange of ideas and courtesies many lives might be saved.

LABORATORY STUDY.

A CONTRIBUTION TO THE STUDY OF STRYCHNIN-TETANUS.

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ONE of the first results reached by the application of the experimental method to the study of drugs was the knowledge that the tetanus produced by strychnin is due to a direct action on the spinal cord. This, as is well known, was shown by Magendie's classic experiments and afterward confirmed, among others, by Stannius. The latter further showed[1] that the convulsions depend on the occurrence of stimuli from without—that is, that the convulsions are the results of exaggerated reflex excitability. Freusberg[2] has gone into the subject at more length and comes to the same conclusion, that strychnin-tetanus differs from ordinary reflex only quantitatively and not in quality, and this view is now, we believe, almost universally held.

To explain the increased reflex excitability, several hypotheses may be formed. It is conceivable that either the whole of the structures, both cells and fibers of the spinal cord, are excited to increased function or that the action is confined to the "sensory" cells of the arc, the "motor" cells, or the connections between these two. At first consideration one is inclined to believe that the motor cells and probably the whole cord are stimulated, for the characteristic difference between strychnin-reflex and ordinary reflex is not so much a shortening of the period between stimulus and response (Freusberg) as the increased strength of the movements and the participation in them of a very much larger number of muscles than in the normal response. Stannius, however, showed that after division of the cord and section of the posterior roots of the lower half no tetanus took place in the lower limbs, as might have been expected if the motor cells had been stimulated. This experiment has been extended by Hering,[3] who found that after section of the whole of the posterior roots of the cord strychnin produced no movement. Hering adduces this as a proof that even in a state of the greatest stimulation the cord possesses no automatism.

Poulsson,[4] approaching the subject from another point of view, finds that besides the excito-reflex action, strychnin possesses a paralyzing action on the cord, and that both these conditions are present at one and the same time. This he showed by cutting off the external stimuli by dipping the frog in a cocain-solution, when he found the animal to lie as if paralyzed by one of the hypnotics. He does not attempt to explain the paradox, his experiments being designed to show that this paralyzing action on the cord is present. Poulsson's results have been disputed, but have been confirmed many times in Schmiedeberg's laboratory, in which this forms one of the "lecture-experiments." A parallel condition in which one of the functions of the cord remains active, while another is already paralyzed, has been shown to be produced by other drugs, as for example, by sanguinarin (Meyer[1] and Borneol Stockman).[2]

Some time after our investigations were commenced we found a little-known paper by Spence, which we consider to contain important facts bearing on the theory of the action of strychnin. Spence's investigations[3] were undertaken with the object of confirming in the frog Magendie's results in mammals. For this purpose he destroyed the circulation and applied an extract of nux vomica to the exposed spinal cord, and found that convulsions were produced as if strychnin had been carried to the cord by the blood. Incidentally he remarked that on placing the extract on the upper part of the cord increased reflexes could be got from the arms, while the lower part of the body remained unaffected. Later, tetanus of both arms and legs resulted from irritation of the skin of the arm, while irritation of the legs caused only ordinary reflex. Eventually irritation of the arms caused no spasm of the legs, but irritation of the legs caused spasm of the whole body.

One of us[4] had already commenced work with the same method of direct application, and our results coincided, as will be shown, with those of Spence. Our method was to expose only a part of the spinal cord to the action of the poison. The first experiments were unsuccessful, owing to our attempting to preserve the circulation in at least a portion of the cord. This was abandoned, and the experiments were carried out on frogs in which the circulation had been destroyed by excision of the heart and destruction of the lymph-hearts. The cord was cut in the region of the medulla from four to six hours before the observations took place. The animal was placed in the frog-holder used in the Leipzig physiologic laboratory, and the cord exposed at the desired point by cutting away the posterior arches of the vertebræ with a small rachiotome, and carefully removing the membranes. In the first experiments only the upper part of the cord was exposed from the medulla oblongata to the lower border of the large nerves given off to the anterior extremities. A one-tenth per cent. solution of strychnin sulphate was applied to the cord with a small pipet, the head being lowered to prevent as much as possible the diffusion of the solution along the cord. In a few moments a distinct increase in the reflex excitability was observed on touching the arms, and soon the lightest touch of the arms elicited a complete tetanus of the legs and whole body. This tetanus presented no appreciable difference from that observed in intact frogs under a similar dose of strychnin. On the other hand, if the legs were touched or even sharply pinched, no response was observed, except sometimes the weak reflex movement of the legs observed in unpoisoned frogs with the circulation destroyed, the arms not moving at all. This tetanus could be elicited any number of times by touching the arms, while irritation of the legs remained without effect.

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[1] Müller's Archiv, 1836.

[2] Archiv f. exp. Path. und Pharm., iii.

[3] Pflüger's Archiv, 54.

[4] Archiv f. exp. Path. und Pharm., Bd. xxvi.

[1] Arch. f. exp. Path. und Pharm., xxix, 397.

[2] Journ. of Physiology, ix.

[3] Edinburgh Med. Journ., 1816.

[4] Dr. Muirhead had, unfortunately, to leave the University through ill-health before this research was completed. With his consent I have taken up the subject, and feel that a point has now been reached at which the publication of our results is desirable.—E. M. H.

Eventually one of two things occurred; either a tetanus could be brought on by pinching the legs as well as the arms, the strychnin-solution having accidentally diffused along the cord, or else one could get no response from either the legs or arms, the cord being apparently paralyzed either from the action of strychnin or from the absence of circulation. In some cases, after general tetanus was well marked from touching the arms, the cord was severed below the exit of the arm-nerves. In two of these a normal reflex could still be obtained by touching the legs, while touching the arms caused tetanus of the upper part of the body.

In the next series of experiments the lumbar portion of the cord was exposed in a similar manner, the head elevated and the drug applied as before to the exposed cord about the origin of the great nerves to the legs. The result was similar to that observed when the cervical portion of the cord was subjected to the action of the poison. A few moments after strychnin was applied, if the legs were touched a complete tetanus of the whole body resulted, while if the arms were touched only a slight reflex, or none at all, occurred.

Our experiments, therefore, confirm in general those of Spence. We did not, however, observe his third stage in which, after application of the drug to the upper part of the cord, the irritation of the legs caused general tetanus, while irritation of the arms caused no movement.

Our results seem to us to admit of only one interpretation, that for the production of strychnin-tetanus in a group of muscles it is not necessary that the motor nerve-cells for that group should be exposed to the action of the poison. Thus, in the experiments in which strychnin was applied to the upper part of the cord, tetanus occurred in the leg from irritation of the arms. Here the reflex arc passed from the skin of the arm through the sensory fibers of the posterior root to the cord, then down the cord and through the motor cells of the anterior horn in the lumbar region to the sciatic nerve and ended in the muscles. On irritation of the legs a normal reflex was sometimes elicited, but often no response was obtained. Here the arc was from the skin of the legs through the posterior roots to the anterior motor roots, and thence again through the sciatic nerve to the muscles. The motor cells in the anterior horn are thus common to each of these arcs, and if the motor cells were the site of the strychnin-action the same exaggerated reflex would be got from each.

The second series of experiments in which strychnin was applied to the lower part of the cord shows further that the fibers of the cord leading from the brain to the motor cells are not the site of the strychnin-action. In the first series one might have supposed that those fibers passing through the poisoned area might be affected and cause the exaggeration of the reflex in the hind legs. This explanation would be, however, very farfetched, as there is every reason to suppose that the descending motor fibers are isolated from impressions from the time they leave the brain until they reach their corresponding motor cells. The second series dispels any doubt as to this, as it is impossible to suppose that the motor fibers for the arms can pass through the lower part of the cord, yet irritation of the leg causes movement of the arms when the "arm-area" is unaffected by strychnin, as shown by the normal reflex or total absence of movement on irritation of the arm.

From these experiments we draw the conclusion, then, that strychnin does not act on the cells of the anterior horn, nor on the fibers descending in the cord from the brain to those motor cells.

We next attempted to find whether the cells of the posterior-root ganglion were the site of the action of strychnin. For this purpose the circulation of the brain was destroyed in large frogs, the posterior-root ganglion exposed in the lumbar region, where it is situated at a considerable distance from the cord, and a strychnin-solution applied to it. No tetanic movements or increased reflex could be got on irritation of the skin of the corresponding leg nor on stimulation by the electric current of the corresponding nerve-root.

The converse of this experiment was also carried out by destroying the brain and medulla by crushing, and exposing the cauda equina and last posterior-root ganglion on the right side. The ganglion was destroyed and the nerve between the ganglion and the cord put upon electrodes and subjected to a weak electric stimulation, which caused moderate reflex contraction of the muscles of the posterior extremities. Now there was injected $\frac{1}{5}$ mgrm. of strychnin sulphate in solution into the abdominal lymph-sac. In a few moments the reflexes became increased, as shown by the strength of stimuli required, and shortly afterward we could get complete tetanus of the whole body on stimulating the nerve or by touching any portion of the frog. Some time later the paralytic stage came on, and the response to stimuli became weaker and weaker, until finally we could get no response. Hering found also that stimulation of the posterior nerve-roots central to the ganglion caused strychnin-convulsions, while Stannius could not elicit tetanus by this means.

On comparing in a strychninized frog the result of stimulation of the posterior root proximal to the ganglion on one side with that of stimulation of the sciatic nerve on the other side, the results were the same except that for the sciatic a slightly stronger stimulus was necessary than for the posterior root.

From these observations we think the inference is clear that strychnin-tetanus is not due to an action on the cells of the posterior-root ganglion. Thus the part of the cord in which the alteration due to the strychnin occurs must be the connection between the posterior root and the cells of the anterior horn. Through the work of Golgi, Cajal, and others, it has been recently demonstrated that these are not directly connected. The modern theory of the spinal cord is that the sensory nerve-root entering the cord divides into two main fibers, one running upward and one downward. From each of these fibers small branches are given off which terminate in brushes around the motor cells and around certain intercalated cells. A reflex impulse, therefore, passing up from the exterior may be diffused through several motor cells by means of these end-brushes. In strychnin-tetanus some resistance to the passage of the impulse in its course between the posterior horn and the end-brushes is removed. That this resistance does not lie in the end-brushes may be shown by the same arguments as were used to show that the motor cells were not affected by the strychnin, for in our first experiments the lumbar motor cells and the brushes around them were certainly outside the poisoned area. To explain the action of strychnin, then, one must have recourse either to an action on some more or less hypothetic cells intercalated in the reflex arc, or else to a lessened resistance to the passage of impulses along the fibers lying within the cord between the posterior horn and the cells of the anterior horn.

In the ganglia of the sympathetic chain there occurs also a connection between cells and end-brushes. Langley and Dickenson[1] have shown that all the sympathetic fibers passing to the pupil through the superior cervical ganglion have such an interruption. It, therefore, seemed of interest to examine whether strychnin has any affect on these ganglia. Several experiments were made on narcotized cats with this object, the cervical sympathetic being exposed and cut, and the strength of stimulus required to cause dilatation of the pupil estimated before and after strychnin. No alteration could be made out either in the strength of stimulus required or in the rapidity or completeness of the dilatation. The sympathetic ganglia differ, however, so widely from the spinal cord that their end-brushes may well differ in their reaction to poisons, and we lay no great weight on such negative result. At the same time, if any inference whatever is to be drawn from these experiments it is in favor of our theory that strychnin does not act either on the end-brushes or on the motor cells.

For further examination of the action of strychnin (and with the solution of the strychnin-action a great advance will be made in our knowledge of the action of morphin and the other opium-alkaloids), it seems to us that the reaction of the simpler invertebrates must be studied. Our experiments have satisfied us that its stimulant action is located in the parts connecting the fibers entering the posterior horn with the end-brushes around the motor cells, and that neither the latter nor the cells of the posterior-root ganglion are necessarily affected by it, and the inference may be drawn that the resistance to the passage of reflex impulses in the normal animal lies, therefore, in this part of the arc.

The pleasant task remains of thanking Professor A. R. Cushny, at whose suggestion and under whose direction the foregoing work was carried out.

NEW DEVICE.

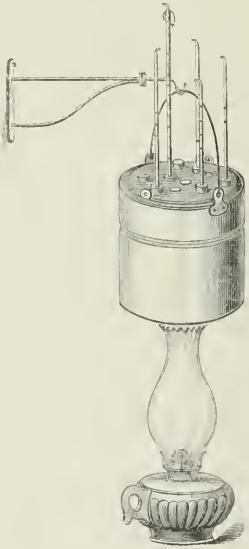
A WATER-BATH FOR PARAFFIN IMBEDDING.

BY D. H. GALLOWAY, PH.G., M.D.,
OF CHICAGO, ILL.

A WATER-BATH that is cheap, efficient, and easily managed, is something that will be greatly appreciated by all physicians with limited laboratory facilities and a desire to do pathologic work. An expensive water-bath with mercurial thermoregulator is not very satisfactory. Such a bath costs $25 or $30; gas is necessary, and it requires an expert to keep it in running order. I wished to examine some pathologic tissue while in Mexico, where such conveniences are difficult to get, and devised a very satisfactory bath. It consisted of an ordinary two-quart tin lard-pail, with two holes punched in the lid, and hung by a string at a convenient distance above the table.

It was filled half full of water and a lamp placed underneath. A clinical thermometer was introduced through one of the holes, and the temperature regulated by the height of the lamp-flame. I then took a two-dram homeopathic vial (a straight tube would be better) and cork to fit, bored a hole through the cork, and through this hole passed a glass tube, one-eighth of an inch in diameter and twelve inches long. I bent the other end of the tube to a right-angle and drew it out to a fine point, in which I left a very small hole. This allowed the vapor of water, oil, or alcohol to escape, and prevented the entrance of dust or moisture. When the temperature of the water reached 48° or 50° C. and became stationary, I put the paraffin and tissue into the bottle, closed it tightly with the cork and tube, and introduced it into the water through the second hole in the lid.

FIG. 1.



Water-bath, complete.

In using this contrivance care must be taken not to disturb the lamp after the tissue is put in. The thermometer may be raised occasionally to see that the temperature is right. The only difficulty is in regulating the lamp, which must be done every time it is filled or the flame extinguished. After a little experience with a particular lamp the operator learns just about how high to turn the blaze, after which but little time is required to regulate the temperature each time the lamp is lighted. I have easily kept the temperature constant—within 2 or 3 degrees—for twenty-four or forty-eight hours, and with almost no attention after starting.

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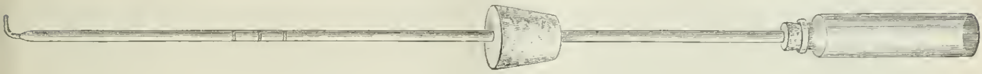
[1] Roy. Soc. Proc., vol. xlvi, 1888, p. 423. Langley, Journ. of Phys., ii, 1890, p. 146.

This simple apparatus is sensitive to any considerable changes of temperature of the room. To obviate this and to provide for carrying a number of specimens through simultaneously, I contrived a modification that may be made in the following manner:

Procure two tin pails of different sizes—those holding three quarts or four quarts are convenient—and place the small one (after removing the bail) in the larger. A few small pieces of glass-tubing serve to keep the bottoms one-eighth of an inch apart. Between the sides of the two pails place upright a piece of glass-tubing long enough to reach from the bottom to an inch above the top. Then pack this space tightly with cotton batting to within one-and-a-half inches of the bottom and half an inch of the top. In the space at the top of cotton pour liquid plaster-of-Paris and allow it to harden. Through the glass tube introduce into the space below the cotton three or four ounces of glycerol. With a pair of tinner's shears cut a circle out of the cover of the inner pail, leaving a margin of one-eighth of an inch inside of the rim. Fit into the remains of the cover a circular piece of wood three-eighths of an inch thick, and fasten by driving a few small nails through the tin margin left for that purpose. In the middle of this wooden cover nail the ring, which will serve as a handle as it did on the tin lid. Through the wood bore from twelve to twenty holes three-quarters of an inch (or of a size to admit the bottles to be used) in diameter. Select corks to fit these holes, and bore the corks to fit the glass tubes attached to the bottles, so that when the specimen is in the bath the hole in the lid will be closed. Solid corks will close the holes not in use. A small hole near the center will admit the thermometer and allow sufficient room for escape of surplus steam. Now get a "bird-cage bracket" and fasten it to the wall at a convenient distance above the table; on this hang the apparatus, place a lamp underneath, and it is ready for use. Aside from the thermometer and lamp, it has cost about fifty cents and two hours' time. One or two cents' worth of oil will run it twenty-four hours. From twelve to twenty operations can be carried on at a time, or that number of students may use it at once, the regulation of the heat being left to one. The instrument I have made for my own use has a capacity of sixteen bottles. It is of the size described. A smaller one would not be so serviceable owing to the difficulty of keeping the small volume of water at a constant temperature, but it may be enlarged without limit and made to accommodate any number of students in a laboratory. If it is desired to use gas instead of oil, a Bunsen burner with the pipe removed may be used. An ordinary Bunsen burner will not do, as the flame, if turned low, will snap back and soon set fire to the rubber tube.

26 Thirty-ninth St.

FIG. 2.



Bottle, with fittings, for paraffin and specimen-tissue.

MEDICAL PROGRESS.

Sigmoido-proctostomy.—At a recent meeting of the Johns Hopkins Medical Society, **Kelly** (*Bulletin of the Johns Hopkins Hospital*, 1895, vol. vi, No. 47, p. 30) reported the case of a woman, twenty-two years old, with a history of pelvic inflammatory disease accompanied with severe suffering, in which in the course of operation 6 cm. of strictured rectum were removed. The lumen of the upper sigmoid portion was so wide and the rectal portion was so rigidly contracted that the injury could not be repaired by anastomosis. The operation was, therefore, concluded by suturing both of the divided ends of the bowel into the lower end of the abdominal incision, the sigmoid at the extreme lower angle, and the rectum just about it.

On examination two months later, an opening about 3 cm. was found above the symphysis pubis, at the bottom of which were two orifices, a larger one below, about 2 cm. in diameter, through which the index finger passed readily up over the left iliac fossa in the direction of the descending colon. Immediately above this, separated by a narrow bridge of tissue, was a small orifice, about 1 cm. in diameter, into which the index finger was passed with difficulty. A long, tight stricture of the rectum, from the abdominal wall down to a point behind the cervix uteri, was found. The woman's suffering was increased after this examination, it is thought, from rupture of the coats of the bowel through into the peritoneum on the right side. A week later the entire scar containing the sigmoid and rectal orifices was dissected out, and these were separated and wrapped separately in gauze and laid aside. To reach the pelvic organs it was necessary to detach numerous loops of adherent coils of small intestine bound together by fresh exudate and bleeding freely. An opening was found in the strictured rectum below the promontory of the sacrum on the right, about 2 cm. from the cut end and communicating with the peritoneal cavity. The uterus and ovary and tube were so covered with dense fibrinous adhesions that it was impossible at first to tell where they lay or decide from apppearances which tube and ovary had been removed in the first operation. The uterus was finally discovered by cutting through the adhesions in the posterior part of the pelvis and evacuating an encysted peritoneal accumulation of 120 c.cm., when the left tube was found and the position of the uterus traced by it. The enucleation was then continued by following the contour of the uterus and stripping up the adhesions, digging it out of a bed of densely organized lymph. The ovarian vessels were then ligated, the uterus amputated in its cervical portion just above the vaginal junction, after ligating both uterine arteries, and the stump of the cervix closed by antero-posterior silk sutures. The cleaned-out pelvis presented the appearance of a rough excavation without peritoneum. The condition of the patient now became so alarming that the operation had to be brought to a speedy termination. Three cm. of the upper part of the strictured rectum were removed, severing it below the rupture. The wedge-shaped flaps were approximated with silk sutures, closing its lumen. The end of the sigmoid was then caught with six long silk traction-sutures through the peritoneal and muscular coats, entering about ½ cm. from the edge of the incision and emerging on the incision without piercing the mucosa. The walls of the bowel were from 3 to 4 mm. thick and somewhat rigid, without the flaccidity of the normal sigmoid. An oblique incision about 3 cm. long and directed from before backward and from left to right was now made into the rectum on the pelvic floor just above and behind the vagina, close to the cervix, below the lower end of the stricture. With a pair of long artery-forceps passed through the anus and ampulla and out through the incision into the pelvic cavity, the six traction-sutures were caught in a bunch and pulled down and out of the anus, drawing the sigmoid into the rectal incision, which was held open with forceps to facilitate the entrance. The bowel was kept from slipping back into the pelvis by grasping the traction-sutures in the heel of the bite of the forceps lying across the anus in the gluteal furrow. The pelvis was washed out and a gauze pack inserted around the sigmoid, and another up among the inflamed bowel and brought out at the lower angle of the incision, which was closed at this point. The woman made an excellent recovery, and subsequently had normal bowel-function. The purulent discharge constantly decreased after the removal of the pack from the lower end of the wound, and at no time was fecal matter passed in any other way than by the anus.

Typhoid Fever.—At a recent meeting of the Manchester Medical Society, DRESCHFELD (*British Medical Journal*, No. 1790, p. 869), after speaking of the difficulty of distinguishing, especially in the feces, the typhoid-bacillus from the bacterium coli commune, pointed out that occasionally the sputum (in some cases of pneumo-typhoid) and the urine might contain the typhoid-bacillus, and these secretions should, therefore, be disinfected. In the feces the bacillus is rarely found before the eighth or ninth day of fever, and it appears that already a few (from six to ten) days after the cessation of the fever the bacilli are no longer present in the feces. Dr. Dreschfeld related some instances of infection from the ingestion of oysters, and pointed out that typhoid fever might be communicated by other articles of food. The typhoid-bacillus grows very readily on most vegetables, and these by being washed or watered with contaminated water might convey the germs of the fever. Insects by coming in contact with contaminated sewage or typhoid-dejecta might carry the organism and deposit it on fruit. A certain family predisposition to typhoid is to be recognized, and an instance was related of a group in which seven members of one family were affected with typhoid within a few weeks. Statistics show that though the mortality from typhoid has decreased very much in England in proportion to the population, the case death-rate, or the relation of the mortality to the morbidity, still shows a mortality of 17 per cent. This compares unfavorably with the mortality observed in some of the German and in the American hospitals in which the treatment by the cold bath was carried out systematically. The good effect of the antiseptic treatment, which is now largely adopted in England, and which has many advocates, is not apparent from the statistics.

Wound-diphtheria in Association with Diphtheria bacilli in the Healthy Pharynx.—SCHOTTMÜLLER (*Deutsche medicinische Wochenshrift*, 1895, No. 17, p. 272) has reported the case of a child, a year and two months old, who presented an excoriation in the right inguinal flexure, which in the course of a few days increased rapidly in size and was the source of a good deal of pain. Inoculation of blood-serum from some of the material upon the surface of the excoriation was followed by the development of cultures of the diphtheria-bacillus, together with staphylococci. On inquiry it was learned that some two weeks previously an older child had died of pharyngeal diphtheria, the patient himself, however, escaping. A pustule formed in the right groin of the latter, which, after picking, gave rise to the formation of a considerable ulcer. The pharynx of the child presented a normal appearance, but diphtheria-bacilli developed in blood-serum inoculated with secretion from the throat. Both these and the organisms obtained from the groin proved virulent to guinea-pigs. Under treatment with applications of mercuric chlorid and iodoform, the wound healed readily and the child speedily progressed to perfect recovery.

Removal of an Ovarian Cyst from an Aged Woman.—At a recent meeting of the New York Obstetrical Society, DR. AUGUSTIN H. GOELET presented a large ovarian cyst which he had removed from a patient sixty-nine years old. The case was reported to show that advanced age does not contraindicate celiotomy in these cases, and also to illustrate the importance of careful preparation of the patient in order to overcome intestinal distention and facilitate the execution of the operation. When the patient first came under observation there was great distention, so that she was for three weeks placed upon a restricted diet. At the time of the operation there was absolutely no intestinal distention. In consequence the operation was completed in fifteen minutes, and the patient made a rapid recovery without a single unfavorable symptom.

Diseased Conditions of the Myocardium of the Auricles.—As the outcome of a careful pathologic study RADASEWSKY (*Zeitschrift für klinische Medicin*, Band xxvii, Heft 5 and 6, p. 381) arrives at the conclusion that, independently of the disseminated, circumscribed, cicatricial form of myocarditis, there occurs also a diffuse fibrous degeneration of the muscular wall of the heart, which is often more pronounced in the auricles than in the ventricles. He further believes that the irregularity of the action of the heart frequently observed in conjunction with chronic myocarditis is due rather to the involvement of the auricular than of the ventricular wall.

Castration for Prostatic Hypertrophy.—At a recent meeting of the Genito-Urinary Section of the New York Academy of Medicine, HAYDEN (*Journal of Cutaneous and Genito-Urinary Diseases*, May, 1895, p. 224) reported the case of a man, seventy-one years old, in which serious symptoms of five years' standing, due to prostatic hypertrophy, were relieved by double castration.

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THE SIGNIFICANCE OF THE DEATH-RATE IN OUR LARGE CITIES.

SCARCELY a philosopher or economist has delivered himself in print of late who has not felt called upon to bewail and denounce the growing tendency of our population to mass itself in large cities. Thirty years ago, we are informed, hardly 10 per cent. of our people resided in cities of 50,000 inhabitants or upward, while now nearly 20 per cent. are to be found there. This is all wrong, we are told. The country is depopulated and its deluded children are packed together in sweltering masses in street, court, and alley, a sort of Black Hole of Calcutta, to become the prey of the vice, disease, and poverty that are declared to be the chief characteristics of city life. Our great cities are denounced as cancers upon the body politic, or simply as hot-beds of disease, of licentiousness, of political corruption, of atheism, and of anarchy.

The principal proof of this usually cited is the high death-rate, which of course supports the whole charge, for is it not written, "The wages of sin are death?" And this, as all vital statistics assure us, is from 20 per cent. to 70 per cent. higher than in the country. Statistics, however, are dangerous allies in this case, for they prove too much. If we follow them back a few decades, we shall be surprised to find that according to their record the "wickedness" of cities is rapidly diminishing, nay, even some of our worst "Sodoms" of to-day have actually a lower death-rate than that of the rural districts in the "good old days" of heathful innocence.

In reality the question is simply one of intelligence. Whenever in city or country the individual or the community have the sense to secure for themselves pure air, pure water, and sound foods, there health, comfort, and morality will prevail; and whenever these conditions are neglected the opposite results will as surely occur. The city is but the country concentrated—the evil and the good of a thousand square miles heaped together upon a few acres. The massing together of the evil readily strikes our attention, but that of the good seems likely to escape it, and yet it occurs in almost the same proportion if we will only see it. The mere fact of the steady rush of the best elements of our rural population toward the great cities ought at least to raise such an inference. The bulk of the people are not fools. The commercial, literary, and social advantages of the city are obvious, but what as to health and morality?

Take the high death-rate, for instance. At first sight this is appalling, but on closer examination we find it following exactly the same lines as in the open country, scourging, decimating the stupid, the intemperate, the vicious; sparing the intelligent, the temperate, the virtuous. Before going further, however, it must be said that the apparent excess of the city death-rate has been unquestionably exaggerated by the much more thorough system of reporting and recording deaths carried out there. In most country districts this is much more lax, in some cases absurdly so, especially in the case of children, of whom frequently neither the birth nor death is recorded; and it is in infant mortality that a very large proportion of the city excess is found. In many rural neighborhoods the cemeteries are small, denominational, often private affairs, and no burial-permit whatever is required.

On a careful examination of the tables, the first thing that strikes us is that the mortality of a city depends not upon its size or age, but upon the intelligence and decency of its inhabitants and authorities. For instance, London, the largest city in the world, stands at the very head of the list for healthfulness, with the truly extraordinary death-rate for 1894 of 17.9 per 1000 (*Report of Medical Officer* *at the Privy Council,* May, 1894). This has been steadily reduced from nearly 80 per 1000, in 1600, with a population of 300,000, and when 20 per 1000 was reached some twenty years ago (population, 3,500,000) it was thought the minimum had been attained, and yet 5,000,000 shows a further decrease. Where it will stop no one knows, and MR. CHADWICK is enthusiastic enough to declare that he can build a city to order so as to have any death-rate from *3 per 1000* up.

Next in order come our own cities, Philadelphia, with a death-rate of 22.6; New York, 28.6; then Paris, with 32; Berlin, with 35; Vienna, with 43; and last of all Constantinople, with 65. The causes for these startling differences cannot be considered in detail here (though for anyone who has visited the cities in question no argument is necessary, except that supplied by his own olfactory nerves), but there is one significant fact which is a good index to all the rest. If we were to arrange these cities in the order of the average number of persons inhabiting each house within their limits, we should find them in almost identically the same order as above, ranging from London, with 6 5, to Vienna, with 42. In London no house or building is permitted to exceed in height the breadth of the street upon which it faces, and the number of inhabitants to each house is strictly limited by law; in the other cities, especially in New York and Vienna, the greed of the landlord is permitted to pile story upon story, or the filthy laziness of the tenant to dig basement under basement, practically unchecked by law. The rapacity of the rich, the apathy of the poor, and the cowardly stupidity of the government bring their own reward.

The same principles that govern the respective death-rates of different cities will be found to control the distribution of the mortality in the different wards of each individual city and among the different age-divisions of her population. This is strikingly illustrated by the admirable "mortality-maps" of Boston and Philadelphia, constructed by Billings, and just published as a special report of the Eleventh United States Census.[1] In these the city is shown divided into wards and sanitary districts, each of which division is shaded in red so as to correspond to the height of its death-rate according to a scale of color indicated in the margin. The most striking thing about them is the wide range of variation of the death-rate, which in some districts is nearly three times as great as in others. Nor is this due to mere density of population, because in Boston, for instance, the most densely populated ward (Ward 16, with 184.16 persons to the acre) has a death-rate of only 26.6, which is also reached by Ward 20, with a density of only 42.2 per acre.

Similarly, Ward 13, with a density of only 45.2, enjoys the bad eminence of the highest death-rate but one, 32.9, that of the city as a whole being 23.59. More impressive yet is the case of the two sanitary districts into which Ward 10 is divided, of which District A, with a density of only 55.6, has a death-rate of 24, while B, with a density almost double, 102.2. has a death-rate of barely 12.6, the lowest in the city. Neither would it seem to be a question of geographical situation or elevation, for Ward 9 is divided into two districts of nearly equal size, the northern of which has a death-rate of 31.1, and the southern of only 15.9. The northwestern third of Ward 10 (District B) has a rate of 12 6, while the remainder of the ward reaches 24.9. These side-by-side contrasts are the more remarkable when we remember that the rate of Districts B in both the last-mentioned wards is actually *below* that of healthy rural districts, which range from 14 to 18 per thousand.

What then is the secret of these striking differences? This is a hard question to answer, but when we turn to the record of births and nationalities of the inhabitants we find some highly suggestive figures. In Ward 8, which is guilty of the highest death-rate in the city, we find of its 13,000 inhabitants only 2900 (22.3 per cent.) are children of native-born parents. In Ward 13, which comes next in "bad eminence," only 1776 out of 23,300, or 7.7 per cent., are of native-born parents, while in Wards 12 and 6, which follow next in fatality, 22 per cent. and 7 per cent., respectively, are of that descent. Does the same relation hold in the contrasted districts of the Ninth and Tenth Wards? Here are the figures: In Ward 9, District A, death-rate 31.1 per cent., has a native-born parents' population of 22.6 per cent. District B, 46.5 per cent.; death-rate 15.9 per cent. In Ward 10, District A, death-rate 24.2 per cent.; population of native-born parents 33.4 per cent. District B, 65.2 per cent.; death-rate 12.6 per cent. In these two last cases it would appear that to double the per cent. of all those having native-born parents is to cut the death-rate in two. District B, of Ward 10, which has the lowest death-rate, has also the highest proportion of "American" inhabitants in the city. In short, the death-rate of a ward like that of a city is solely a question of the cleanliness, intelligence, and morality of its citizens. Those who live like pigs must expect to die like hogs.

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[1] Vital Statistics of Boston and Philadelphia for the Six Years ending May 31, 1890.

Nor is this by any means a question of wealth or poverty. The ward with the lowest death-rate in Philadelphia (Thirty-third) is described as mainly occupied by "small two and three-story dwellings; the residents employed in workshops and railroads;" while the third lowest (Twenty-eighth) has for its residents largely clerks and mechanics, and has "considerable manufacturing interests." Strange as it may seem, investigations have shown that rents and the cost of living generally are actually higher in the slums and purlieus than in "Peabody" and other "model" buildings, or in respectable artisan districts and suburbs. The only thing that compels any man to stay in the slums is inability or unwillingness to behave himself decently in respectable quarters. If, on the other hand, the dirt, warmth, and sociability of the congested precincts suit his taste, by all means let him stay there—but he must pay the penalty.

The other distribution of the death-rate which this report impresses upon us is that as to the age of its victims. No less than 26.1 per cent. of the total deaths in Boston, and 23 per cent. in Philadelphia, occur in children under one year of age. In fact, it is in this age-class that the greater part of the increase of the city death-rate now lies. King Herod would have reason to be proud of his performance compared with such a record. The very age at which the welfare of the individual can be most absolutely controlled and secured by parents or other guardians, when the organism literally requires only two things to thrive—pure air and pure milk—is the period in which the greatest slaughter takes place. Broadly regarded, the excess is punishment for neglect, a check upon the propagation of the unfit, and in a most merciful form.

Korosi, in Buda-Pesth, and Straussmann, in Berlin, have reported results that seem to indicate that even the floor of the building occupied has a distinct influence on the death-rate, those living in the basements having the highest rate, those in the fourth and fifth stories the next, and those in the second and third stories the lowest.

To sum up, the excessive death-rate in our large cities is due almost wholly to causes under our control. It is a question simply of the intelligence and alertness of the individual and of the municipality. It is one of the great selective forces of nature for promoting cleanliness, morality, and common-sense, and eliminating dirtiness, vice, and stupidity. Just as there are no fouler slums (though there may be larger) in London than can be found in almost any country town, and no worse criminals or a larger proportion of them than in some most sparsely settled districts, so the *average* city death-rate need not necessarily be higher than the rural. In some districts it is and will be actually lower, and in some, into which have drifted and inevitably drift the failures of every description—the vicious, the improvident, the lazy, the low-lived—it is much higher, and one might perhaps add that it ought to be.

THE RELATION OF DISEASES OF THE SPINAL CORD TO VASCULAR LESIONS.

À priori evidence would lead to the belief that disease not dependent upon direct exciting influences, such as traumatism, chemic action, heat, cold, or upon extension from adjacent morbid processes, must be due, particularly when deep-seated and beyond the reach of extraneous conditions, to factors operating through the intermediation of the circulation. Such disease may be brought about by the presence in the blood of minute vegetable or animal organisms or their products or of other toxic matters, acting either directly on the tissues themselves or upon the bloodvessels. In either event there result certain functional, nutritional, structural, or organic changes that we recognize as disease.

In an interesting monograph recently published,[1] the position is well taken that a very large proportion of cases of cerebral disease and a not inconsiderable proportion of cases of spinal disease are due to vascular lesions. This difference in vulnerability is to be attributed to differences in blood-pressure, the spinal cord receiving its blood-supply through narrow, long, and tortuous arteries, which are thus not subject to high pressure. The vascular supply of the cord may be considered as derived from two systems, a central and a peripheral, between which, however, there is no sharp division. It has been shown that a transverse section of the cord can be divided into three vascular zones: (1) the inner part of the gray matter (except the posterior horn and its head), which is supplied by the anterior median artery; (2) the superficial layer of white matter, which is supplied by the peripheral arteries; and (3) the peripheral part of the gray matter and the adjacent white matter, which are supplied by both the peripheral and central arteries. For further convenience the blood-supply of the cord may be divided into an anterior and a posterior. The gray matter is more abundantly supplied with the blood than the white. The arteries penetrating the spinal cord are believed to be true terminal arteries. The lowest part of the cord receives but a scanty blood-supply. The spinal veins anastomose freely. A larger portion of the blood passes into the peripheral veins, especially the posterior, than into the anterior; so that while the anterior arteries are more important than the posterior, the posterior veins are more important than the anterior. The cord contains no true lymphatics. These are represented by closed spaces around the bloodvessels and by lymphatic clefts in the adventitia.

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[1] On the Relation of Diseases of the Spinal Cord to the Distribution and Lesions of the Spinal Bloodvessels. By R. T. Williamson, M.D. (Lond.), M.R.C.P. London: H. K. Lewis, 1895.

Now, in accordance with the blood-supply affected by any one of a considerable number of influences, we may have developed one or another of the various forms of spinal disease inflammation, softening, hemorrhage, sclerosis, the localization and distribution of the disease depending upon the circulatory area involved, and no doubt in part upon the nature of the causative influence. As already stated, these influences may act directly on the tissues of the cord or indirectly through changes brought about in the walls of the bloodvessels. The propositions herein presented are not based upon mere hypothetic data, but their applicability depends upon a considerable and accumulating pathologic evidence of unequivocal character, and of which a considerable and varied array is presented in the monograph to which we have already referred, and from which the essential points of this article have been derived.

EDITORIAL COMMENTS.

The Lymphocytotic Action of Pilocarpin.—It will be recalled that a short time ago quite a ferment was created by the announcement through the public prints that a New York physician had discovered in pilocarpin a remedy for tuberculosis. That this announcement was unwarranted, as well as unjust, the sequence of events amply demonstrates. The fact of the matter is that Dr. Louis Waldstein, of New York, and working in Berlin, found in a number of infectious diseases certain changes in the blood that seemed to him indicative of a tendency to, if not a part of the process of, recovery, and similar changes he found could be induced by the subcutaneous administration of pilocarpin in small and medicinal doses. The report of these observations, and the conclusions to which they lead, are detailed in the *Berliner klinische Wochenschrift*, 1895, Nos. 17 and 18.

Waldstein made a study of the colorless blood-corpuscles in cases of diphtheria treated with the antitoxin, from the height of the attack until convalescence was established. He found that prior to the injection of the antitoxin, and during the acme of the disease, the multinuclear leukocytes were increased in number, while the lymphocytes were diminished. At this stage the nuclei, particularly of the uninuclear cells, stained feebly with methyl-green, and the granulations, which were small and few, were stained bright red by acid fuchsin. As soon, however, as improvement began to set in the relation suddenly changed, the number of multinuclear cells declining to the normal and the uninuclear increasing. Now both nuclei and granulations stained more deeply, and the latter increased in number and size. When the lymphocytes exceeded the normal they contained the finest granulations, and there were present also cells containing eosinophile granulations. As recovery was approached the number of coarsely granular cells gradually diminished. In cases unattended with improvement the injection of the antitoxin was followed by an increase of lymphocytes, without, however, a reduction in the multinuclear cells. This persistence in the increase of the number of multinuclear cells proved of unfavorable prognostic omen, the patients dying or the disease assuming a chronic character, with involvement of the lymphatic glands or of the ears. The mutual relation of the leukocytes bore no constant relation to the course of the fever or the character of the pulse; nor did the visible membrane appear to stand in any causal connection therewith. Post-mortem examination of children dead of diphtheria disclosed swelling of Peyer's patches and enlargement of the mesenteric glands, and not rarely acute disseminated miliary tuberculosis.

Assuming that artificial increase in the number of lymphocytes played an important part in recovery from infectious diseases, an agent was sought for capable of effecting such a change, and pilocarpin was found to answer the purpose. With this drug marked reduction in the size of enlarged lymphatic glands in the sequence of measles and scarlatina was effected. Children were given injections beneath the skin of one-thirtieth grain at intervals of one or more days for a week or ten days. Improvement also followed such treatment in a case of mediastinal and multiple lymphomata, although the patient was at the same time taking arsenic. The opinion is expressed that pilocarpin is capable of a curative action upon lymphatic glandular tumors. Examination of the blood under such conditions disclosed a state of hypo-leukocytosis, which disappeared with the institution of the treatment. The temperature was also slightly elevated, but declined under treatment. Complaint of pain referred to the ears likewise disappeared.

In a fatal case of advanced pulmonary and glandular tuberculosis the injection of one-sixtieth grain of pilocarpin was followed by vomiting, elevation of temperature, and a scarlatinous exanthem, and post-mortem examination disclosed recent disseminated areas of hepatization in the lungs, with miliary nodules and a cavity with smooth walls. In another fatal case the temperature rose after daily injections of one-thirtieth grain for a week, and a week afterward meningeal symptoms appeared, followed in five days by death. Post-mortem examination disclosed carnified areas, miliary nodules, a cavity with smooth walls, and cicatrices in the lungs, with tuberculous meningitis, hydrocephalus and internal hydrorrhachis. In other cases also the injection was followed by elevation of temperature, blood-streaked expectoration, and pain in the side. It will be noticed that the symptoms and the anatomic conditions resembled those that followed injections of tuberculin. These changes are ascribed to a stimulating influence upon the lymphatic apparatus. In a case of lupus of long standing an injection of one-thirtieth grain of pilocarpin was followed by marked improvement. As no reaction occurred the dose was subsequently increased to grain one-twelfth, and the improvement was maintained.

Seven cases of streptococcous angina, in patients from three to ten years of age, were treated with daily injections of from one-sixtieth grain to one-twelfth grain, with the result of increasing the number of lymphocytes and diminishing the number of multinuclear cells, causing a decline in temperature and leading to recovery. In a case of uncomplicated diphtheria no influence was exerted by pilocarpin, but in cases of mixed infection the conjoint use of pilocarpin and the antitoxin was followed by results of which either alone was not capable.

These admirable observations, while interesting and suggestive, are far from conclusive, but they open a field of investigation that, it is to be hoped, may yield productive therapeutic results.

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The Abuse of Reprints.—When a man has done excellent work and published the results in an interesting paper his friends and his colleagues not infrequently write, begging for a reprint of it, or asking where a copy of the original can be secured. We suppose that the present popular "Reprint" had its origin in these requests; but the history of the subject, interesting as it may be, is a matter which is overshadowed by the present abuse into which the innocent pamphlet has fallen.

We cannot see the least impropriety, after a man has written a good magazine article, in his mailing copies of it to such of his friends as may be interested in the subject-matter or in his progress in the scientific sphere. This may be defined as the *use of the reprint*. We have a collection of carefully selected pamphlets from friends all over the United States, which we value highly, and for many of which *we asked*, because we desire frequently to refer to and to quote from them.

While such a legitimate use of printed matter is highly commendable, we are almost disgusted to observe that certain members of the profession, whose vanity, thirst for fame, mercenary tendency, or combination with drug-manufacturers exceeds their modesty, have turned this little courtesy into an open, culpable medium of advertisement.

Almost daily there reach us from the ends of our country little pamphlets which report ordinary cases studied by extraordinary Dr. So-and-So, or which terminate with the most unstinted praise of some nostrum, or which sum up a sufficient number of cases of some particular operation to make obvious the desire of the writer to be an authority upon the subject treated.

Too often, instead of the reprints supplied ordinarily by the journal, thousands are bought and paid for, and distributed to all the doctors in the directory. Specialists are more prone to the habit than general practitioners, because of its success as an advertisement.

At times the reprints are bound in ornamented or loudly colored paper, and have printed in one corner "Presented with the compliments of the [would-be-known but at present obscure] author."

One particular pamphlet has impressed us with the complete lack of modesty and dignity which may result from carelessness in the manner in which one presents his work to the world. This pamphlet is rather elaborately covered in tinted paper, describes certain surgical operations by a learned professor, who seems to be a great man, for he signs himself A.M., M.D. (mentions a German university), M.R.C.S. Eng., Prof. of Surgery, etc. He never refers to the pamphlet in other terms than a "monograph," and hence seems to be proud of it. The "monograph" is fully illustrated with whole-page plates, the first of which shows the "Immersion of the Hands in Antiseptic Solutions, Preparatory to Operation," but really seems intended to be a portrait of the learned gentleman, with, incidentally, some of his assistants. The portrait is good, but we would observe that the antisepsis is bad. Only the tips of the fingers seem to be in the antiseptic solution; the basins are painfully small, two individuals are obliged to wash in one basin, and we observe that this precaution is taken before the operation is to begin, for the patient is not present.

It would be unjust to the doctor, who is a Professor of Surgery, not to say that much contained in the pamphlet is good, but we must infer that it is an advertisement from its closing words :

"Physicians receiving a copy of this monograph and who desire further information about these cases or my clinics generally will please call or address me at my office. Your, sincerely,
" ——— ———."

We feel that all the skill and learning of this doubtless most excellent gentleman can scarcely make us pardon the vanity of his pen. We are, furthermore, sorry to single out one man's foibles, but hope that his sufferings will be a warning to other of our friends. It were better to remain obscure than to appear ridiculous.

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Bacteriologic Examinations by the Bureau of Health.—It is announced that the Bureau of Health, through its Division of Pathology, Bacteriology, and Disinfection, is now prepared to make bacteriologic examinations in suspected cases of diphtheria. Culture-tubes can be obtained at the various police stations, and the inoculations made by the attending physician or upon request by an authorized medical inspector. As the specific organism often disappears from the throat during convalescence it is desirable that the culture-inoculation be made as early as possible. The advantages and the desirability of early diagnosis are perfectly obvious. It is further desirable that inoculation be made from the throats of those that come in contact with cases of diphtheria, as virulent diphthera-bacilli have been found under these conditions.

Inoculations should be made by rubbing the cotton swab attached to the end of the wire contained in the test-tube gently but freely against any visible exudate, and then drawing it over the surface of the culture-medium without breaking the surface of the latter. The swab should then be replaced in the tube from which it was taken, and both tubes replugged and put back into the box. The box may be returned to the station from which it was obtained as soon as possible or brought directly to the laboratory. The tubes will be collected every afternoon, examined the following morning, and reports will be mailed by 1 o'clock P.M. The attending physician can obtain information, however, by telephoning directly to the laboratory after that hour.

Cases that prove to be false diphtheria will not be visited by the health inspectors except upon the request of the attending physician. On the other hand, cases that prove to be true diphtheria will be subjected to the usual rules and regulations governing contagious disease.

The Bureau further announces that it is also prepared to examine blood, urine, gastric secretion, sputum for tubercle-bacilli, and other pathologic material.

Scorbutus in Infancy.—In an interesting address recently delivered before the First District Dental Society of the State of New York, Dr. E. C. Kirk called attention to the occurrence of scorbutus in infancy as a result of lack of variety in the diet of infants artificially fed, and particularly of the restriction to the so-called "prepared foods." Not only does such a deficiency in diet give rise to the profound blood-changes that underlie scorbutus, but, from changes in the reaction of the secretions of the mouth, the teeth undergo decalcification. Children thus affected are prone to be highly nervous and irritable, markedly cachectic, and disposed to catarrhal disorders. The margin of the gums recedes from the teeth and the gums become thickened, necrotic, and vascular, bleeding upon slight provocation. The teeth may become loosened, even to the degree of falling out, and small vascular tumors may form at the site of developing teeth. Hemorrhage often occurs beneath the periosteum, most commonly of the femora and bones of the leg, and is attended with swelling and exquisite pain. The importance of recognizing the nature of the cases in which these manifestations appear must be perfectly obvious, as upon the diagnosis depends the application of the appropriate therapy, which will often be attended with results that appear scarcely short of the marvellous. We have here, too, the illustration of the importance of examining the mouth in obscure conditions, and also of the service an intelligent dentist can render the general physician.

The Decline of Keeleyism.—Information received by Rev. Dr. J. M. Buckley, the able and conscientious editor of the *Christian Advocate*, from sixty-eight clergymen and twenty-five physicians, in response to an appeal for data upon the results yielded by the so-called Keeley gold cure in the treatment of inebriety, shows that of 534 cases personally known to have been thus treated 251 relapsed, 13 became insane, 11 died, 2 committed suicide, and 275 were cured. To render the investigation perfectly impartial Dr. Buckley had the correspondence thereupon received and cared for by a disinterested person and the statistics prepared by another person, and finally had the result scrutinized by two other persons. Of the accuracy, reliability, and impartiality of this investigation there cannot be the slightest doubt or question. It merely shows that those most interested have lied concerning the results of the treatment, as they have also lied about the pretended composition of the materials used. And it is logical to conclude that they are as little to be trusted in other matters. It is almost too much to hope that Dr. Buckley's exposure will have a serious effect upon the outrageous and unprincipled imposition upon human credulity and gullibility; but it must hasten the natural death that comes to all similar enterprises. As long, however, as there can be found persons willing to be mystified and to be duped there will also be those willing to accommodate them.

SOCIETY PROCEEDINGS.

THE FORTY-FIFTH ANNUAL MEETING OF THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA.

Held at Chambersburg May 21, 22, 23, and 24, 1895.

Despite the chilling blasts that swept down the Cumberland valley, carrying with them clouds of mist and rain that at times completely obscured the surrounding hills and converted the macadamized roads of Chambersburg into rivulets, physicians—both delegates and permanent members—flocked in from all portions of the State to attend the forty-fifth annual meeting of the Pennsylvania State Medical Society, which convened in that historic town during last week. That the attendance was up to or above the usual the overcrowded hotels and the roll-book of the registration-office attest. Indeed, the hotel-accommodations were utterly insufficient to meet the demands made upon them, and to contribute still further to the discomfort of the incoming guests were the unprecedented efforts on the part of avaricious proprietors to double the usual ratings of their houses. Notwithstanding these unfortunate features, however, the cordiality of the citizens of the town and the untiring labors of a worthy Committee of Arrangements, under the chairmanship of the genial Dr. George S. Hull, converted what might have been, to say the least, an unsatisfactory meeting into one that will be handed down in the records of the association as abounding in interest and pleasant memories. The interest that was manifested was twofold. In the first place, the historic surroundings, redolent with the legends of the Civil War, and abounding in the natural attractions of a mountainous district, were in and of themselves more than sufficient to draw to the gathering many who seized this opportunity of visiting the famous locality, and who brought with them their wives and daughters, thus swelling the list of visitors to considerably over three-hundred; and, again, the distinguished standing of the two candidates for the presidency of the organization, Dr. John Montgomery, of Chambersburg, and Dr. William S. Foster, of Pittsburg, rendered their canvass one of more than ordinary interest to their constituencies.

A detailed account of the business transacted during the session would be tedious and unnecessary, and only the essential features of this portion of the object of the convention need be noted. Especially worthy of mention, it would seem, was the effort made by the retiring President, Dr. John B. Roberts, of Philadelphia, as embodied in a resolution presented by him on the opening morning, to render more active and efficient the Board of Trustees, in order that that body should no longer be regarded as a mere figure-head in the organization of the Society. Dr. Roberts' resolution was referred to a special committee of five, consisting of himself as chairman, with Drs. Bishop, Craig, Daily, and T. S. K. Morton as colleagues, whose duty it will be to attend to this and other business of the association, and to make a report at the coming meeting. The treasurer, Dr. George Benson Dunmire, of Philadelphia, reported a cash balance in the treasury of $2330.28; and the secretary, Dr. William B. Atkinson, congratulated the Society on the continued increase in the membership of the State and County societies. It was recommended that steps be taken by the Society, in the hope of still further increasing the membership, to bring its work more definitely to the notice of the large number of physicians in the State who, at present, practically know nothing of its design, or of the attractions, social and scientific, of its meetings.

Dr. H. G. McCormick, of Lycoming County, presented the report of the State Board of Medical Examiners, embodying the result of the last examination of applicants desirous of practising medicine within the limits of the State. He reported that 12.4 per cent. of those who applied had been rejected by the Board.

Dr. Howard F. Hansell, of Philadelphia, presented the report of the Committee on Contagious Ophthalmia. He stated that Senate Bill 516, for the regulation of the reports of midwives and nurses in all cases of purulent ophthalmia to the Health Officer or other designated official, had already passed the Senate, and would probably become a law during the present year.

Dr. Edward Jackson, of Philadelphia, in rendering the report of the Publication Committee, suggested that copies of the *Transactions* of the Society be sent directly, either by mail or by express, to the members of the various County Societies, instead of being sent in bulk, as at present, to the various secretaries of these organizations. This was agreed to.

There had been a growing feeling that it would be well to break the precedent of electing a President from the town or city in which the meeting is held. Accordingly, while Dr. Montgomery was heartily supported by his County society and the local physicians, the majority of the Nominating Committee was in favor of Dr. Foster, who was selected by a vote of 32 to 5. The Committee made the following report of nominations: *President*, Dr. W. S. Foster, Allegheny County; *Vice-Presidents*, Dr. John Montgomery, Chambersburg; A. P. Hull, Lycoming; T. H. Shapnack, Green; A. B. Brumbaugh, Huntingdon; *Secretary*, W. B. Atkinson, Philadelphia; *Assistant Secretary*, A. L. Stevens, Bradford.

Dr. Foster has been a practising physician in Pittsburg for over twenty-six years. He has been a vice-president of the Society, a member of the Judicial Council, and for five years a member of the Legislative Committee. By appointment of the Governor he is Secretary of the State Board of Medical Examiners, and has in his practice achieved an honorable and widespread reputation. Harrisburg was selected as the place for the meeting in May next, and Dr. W. S. Bishop chairman of the Committee on Arrangements.

It is probable that the most striking feature of the present meeting was its social element. It was the universal statement that at no other place of meeting was better entertainment afforded. Said one of the visitors: "Our entertainment is more than we could ask or expect;" and a physician who had attended sessions of the American Medical Association at Washington, Baltimore, Milwaukee, and elsewhere remarked that the reception at Wilson College was better in every respect than any he had ever attended. Assembled in the new chapel of the college, a happy address of welcome was delivered by the president, the Rev. Dr. Samuel A. Martin. In addition there were songs by the college glee club and music by the college orchestra.

Dr. John B. Roberts delivered an excellent popular address on

THE PRESENT ATTITUDE OF PHYSICIANS AND MODERN MEDICINE TOWARD HOMEOPATHY,

after which the college was thrown open to the visitors. On Thursday evening there was an excursion to Mont Alto Park, including a visit of half an hour at the Industrial School at Scotland. The park was illuminated with electricity, a banquet was served in the dining-hall, and dancing followed in the pavilion. At 9 o'clock, Friday morning, the festivities culminated in a free excursion to Gettysburg, including a stop of thirty minutes at Penmar, the picturesque excursion resort of the Western Maryland Railroad.

Notwithstanding this great abundance of entertainment the scientific portion of the meeting did not fall below the average. Thanks to the energetic efforts of the chairman of the Committee on Scientific Business, Dr. Charles W. Dulles, of Philadelphia, a large number (seventy-seven) of valuable papers had been presented. Pre-eminent among them may be mentioned the addresses of Drs. Hildegarde H. Langsdorf and I. C. Gable, and the papers of Drs. John H. Packard, Benjamin Lee, Edwin Rosenthal, H. A. Arnold, and Joseph McFarland. Dr. Gable's address included a *résumé* of the present status of the various medical subjects that have during the past twelve months occupied more than the ordinary amount of attention. Especially have the infectious diseases commanded a large amount of study. The discovery of the antitoxic blood-serum theory of the treatment of diphtheria is probably the most important advance of the year. Since its adoption the mortality of diphtheria in Berlin has dropped from 44 per cent. to only 21 per cent. Welsh, in the Philadelphia Municipal Hospital, has treated eighty-eight cases with only twenty-one deaths, giving a mortality of a fraction over 23 per cent. There is now a gross mortality of from 5 to 24 per cent., as rated against the older mortality of 45 per cent. A sufficient length of time has not yet elapsed to state definitely the exact value of the antitoxic treatment, but enough data have been collected to prove that this is a material advance over the old methods of treatment. It would not be proper to stop the employment of the tincture of the chlorid of iron and the other old remedies, but the antitoxin should be used in addition.

Antitubercle-serum has been yielding good results in the treatment of pulmonary tuberculosis, both in the hands of eminent observers abroad and in this country. Guaiacol, however, is probably, together with creosote, the best remedy in the symptomatic treatment of pulmonary tuberculosis.

Local antisepsis in the treatment of wounds has been greatly modified of late. Iodoform has been replaced by aristol, acetanilid, and a host of other odorless coal-tar preparations. Intestinal antisepsis has been largely developed, and an immense number of drugs, mainly coal-tar preparations, have been employed advantageously.

Dr. Benjamin Lee's paper on the

NECESSITY FOR A STATE SYSTEM OF REGISTRATION OF VITAL STATISTICS IN PENNSYLVANIA

was received so cordially that the following resolutions were unanimously passed and transmitted to the Legislature at Harrisburg:

Resolved, That the Medical Society of the State of Pennsylvania considers the registration of births, marriages, and deaths at the Central Bureau of Vital Statistics at the capital of the State a matter of the utmost importance in the interest of medical science, of public health, and of protection to human life; and, therefore,

Resolved, That the Society respectfully memorializes the honorable the Senate and House of Representatives of the State of Pennsylvania in favor of the passage of the bills introduced at the present session to authorize the State Board of Health to employ a clerk for the registration of vital statistics, to confer the powers of a Board of Health on the School Board of each township, and so to increase the appropriation to the State Board of Health as to enable it to discharge efficiently this important duty as assigned to it by law.

Resolved, That copies of the preceding resolutions, signed by the President and Secretary, be at once transmitted to the Hon. C. Wesley Thomas, President *pro tem.* of the Senate, and the Hon. Henry F. Walton, Speaker of the House of Representatives, at Harrisburg.

Dr. T. D. Dunn, of Westchester, read a paper on

SOME OF THE SEQUELÆ OF TYPHOID FEVER.

He has noticed erythema nodosum in three cases. Rheumatic pains and fever of moderate type were usually associated with the eruption. Treatment consisted of salines, salicylate of quinin, anodynes, and applications for the eruption. Twice has he noted arterial and venous thrombosis, in one case resulting fatally. Post-typhoid abscesses he has noted on the legs, arms, and body in a small lad. They were associated with a suppurative parotitis on the right side. Of the affections of the nervous system he has seen in several instances absolute speechlessness, with melancholia and the involuntary escape of feces and urine. One of these patients committed suicide while in this condition.

THE TREATMENT OF MALIGNANT TUMORS BY THE TOXIN OF ERYSIPELAS

was the title of a paper read by Dr. John B. Roberts, of Philadelphia, which appears in the present issue of The Medical News.

Dr. James Tyson, of Philadelphia, read a paper on

THE TREATMENT OF TYPHOID FEVER BY THE BRAND METHOD.

Under the use of the Brand method of treatment the mortality of typhoid fever has been markedly diminished. At the Johns Hopkins Hospital, under Osler, the mortality is now but $7\frac{1}{10}$ per cent. as contrasted with from 10 to 15 per cent. under other methods of treatment. Dr. Tyson does not wish to make an absolute diagnosis, but just as soon as typhoid fever is suspected he at once uses the bath. The bladder is emptied, the skin, if moist, is dried, and the patient then gets into the bath himself and an ice-cap is placed upon his head. He is kept in the bath for fifteen minutes, being briskly rubbed everywhere except over the abdomen. He is then wrapped in a blanket and dried. In three-quarters of an hour the temperature is again taken, and if the thermometer registers 102.2° the bath is again given. The heart and pulse, instead of being weakened by the process, are strengthened. Respiration also becomes deeper and stronger. In thirty-four cases so treated he has had but one death, giving a mortality of 6 per cent. Professor J. C. Wilson has treated by this method sixty-four cases without a single death.

Dr. Benjamin Lee, of Philadelphia, in his paper on

THE EMOTIONAL BRAIN,

stated that he considered the popularity of *Trilby* as due to the fact that the story is a series of flash-light photographs of living beings and scenes. It is true in details and is not mawkish. Every human being has his brains —namely, a thinking or rational and a feeling or emotional brain, the former situated in the cranium, the latter in the abdomen (the Biblical "bowels of compassion"), the solar plexus.

Dr. Charles P. Noble, of Philadelphia, read a paper on

MOVABLE KIDNEY.

He stated that about one-fourth of his patients suffer from movable kidney, therefore he regards it as quite a common condition. The right kidney is invariably the one that is displaced, though occasionally both are involved; he has never seen the left organ alone displaced. The patients are usually thin. He has seen only one exception to this law, and that was a woman with a pendulous abdomen. The condition occurs among the rich and poor alike. The reflex symptoms that accompany the condition are occasionally general, but are usually only abdominal. There is bloating, distention of the bowels, cardialgia, and palpitation. The local symptoms vary in degree. Severe pain is not frequent, though occasionally noted. Acute strangulation from torsion has been reported, but this is rare. In many cases there are absolutely no symptoms. Variations in the quantity of urine voided during the twenty-four hours are due to twisting of the ureter. What is the normal position of the kidneys? The standard text-books on anatomy differ in their statements. In three-fourths of Noble's cases neither kidney extended below the ribs, therefore they could not be felt. He concludes that this must, therefore, be the usual position, and not down in the flanks. To discover them the patient must be examined while standing and bending forward, resting the hands upon the table, and expiring normally. The left hand of the examiner is placed upon the lumbar region and the right upon the abdomen opposite. The rest-cure is only of service in the slightly movable cases. Nephrorrhaphy is simple, rapid, and satisfactory. He has performed the operation in six cases. In one-tenth of his cases he finds both kidneys movable. The patient cannot lie upon the side opposite to the movable kidney. His method of operating is to cut down in the kidney through a lumbar incision, split the capsule, insert stitches through it and carry them through the lumbar muscles.

Dr. H. G. McCormick, of Williamsport, presented a paper on

THE MANAGEMENT OF CASES OF TYPHOID FEVER.

The old teaching has been that typhoid fever is a self-limited disease, and no course of treatment will be able to abort it. This, he believes, is an error. He is in the habit of giving his patients calomel until the bowels are opened; at times he employs salts instead. Internally he employes guaiacol (four drops) and eucalyptol (eight drops) every two hours; a milk-diet, stimulus, and strychnin as required. The bowels are washed out for the purpose of cleanliness, to reduce the temperature, and to afford nourishment. One quart or three pints of ice-water may be injected for this purpose. A bath is given every day. Ergotol only is given for hemorrhage. He never uses morphin or opium in any form to control the bleeding. Large enemata of ice-water are given in addition to the ergotol. Transfusion is employed as required. His patients never suffer from tympanites. He has treated over three-hundred cases with guaiacol without any ill-effects.

In reply Dr. Solis Cohen, of Philadelphia, remarked that taking the records of tens of thousands of cases it is true that typhoid fever will run a course of definite duration of from twenty-four to twenty-eight days. He prefers salol as an antiseptic agent, and the only patient he has lost in two years was treated by guaiacol. He heartily favors the use of water. In case of hemorrhage he would always use opium. The danger of tympanites thus produced is nothing when compared to the danger of loosening of the clots in the bowels. He considers the Brand treatment the best of all methods of treatment for typhoid fever.

Dr. I. C. Gable, of York, has used guaiacol and carbonate of guaiacol in typhoid fever. Guaiacol itself often upsets the stomach, while the carbonate in doses of from five to ten grains every four hours is well borne.

Dr. A. P. Hull, of Montgomery Station, read a paper on

THE ANTISEPTIC TREATMENT OF TYPHOID FEVER BY GUAIACOL.

The great question in the treatment of typhoid fever is, What can we do to reduce the mortality? In the treatment of his cases he is accustomed to use guaiacol, from $\frac{1}{4}$ to $\frac{1}{2}$ a drop, with $\frac{1}{12}$ grain of calomel until slight purgation is produced. He then washes out the bowels with large douches of water. The temperature is controlled by the external application of guaiacol, which acts in about twenty minutes and lasts for from three to four hours. Ten drops is the largest dose thus used. Larger doses are liable to produce a chill. The abdomen is first washed, and then guaiacol is dropped on and rubbed in, and the spot is covered with oiled silk. He has treated eleven cases in this manner, all recovering.

Dr. Kœnig, of Allegheny, stated that he was a thorough advocate of the antiseptic treatment of typhoid fever. Guaiacol probably causes less production of the ptomains of the bacillus, and thus renders the latter less harmful.

The paper of Dr. John H. Packard, of Philadelphia, was entitled

LIGATION OF ARTERIES IN THE TREATMENT OF MALIGNANT DISEASE.

In malignant disease of the mouth and surrounding parts the patient frequently suffers from septic pneumonia from the inhalation of particles of the morbid growth. After ligation of the arteries the diseased tissues may be curetted away. If, in doing this, a large arterial trunk be wounded, he would tie it with as little concern as he would a smaller trunk. He finds that collateral circulation is readily established. Some relief follows in a certain proportion of the cases so operated upon, but the results are not brilliant. Dercum reports a case of brain-tumor in which after ligation of the common carotid artery the patient had some relief of the symptoms.

(To be concluded.)

NEWS ITEMS.

The American Laryngological Association will hold its seventeenth annual session at Rochester, N. Y., in the Chamber of Commerce, June 17, 18, and 19, 1895. The profession is cordially invited to attend.

The following papers will be read: President's Address, by John O. Roe; Foreign Bodies in the Esophagus, by Harrison Allen; Desiccated Thyroids in Goitre, by E. Fletcher Ingalls; The Influence of Chronic Diseases of the Throat upon Certain Defects of Speech, by D. Bryson Delavan; Electrolysis by a Current Controller for the Reduction of Spurs of the Nasal Septum, by W. E. Casselberry; Is Acute Tonsillitis in Any Way Dependent upon the Rheumatic Diathesis? by George B. Hope. *a.* Some Remarks on Removal of the Tonsils; *b.* A Case of Lipoma of the Larynx, by J. W. Farlow. *a.* A Case of Melancholia Cured by Intranasal Operation. *b.* A Case of Suppurative Ethmoid Disease, Followed by Invasion of Sphenoidal Sinus, Abscess of the Brain, and Death, by F. H. Bosworth. A Consideration of Some of the More Important Principles of Intra-nasal Surgery, by W. K. Simpson; Ludwig's Angina, by J. E. Newcomb; Discussion. Tuberculosis of the Upper Air-passages: Etiology by Jonathan Wright, Diagnosis, by C. C. Rice, Treatment by E. L. Shurly and J. W. Gleitsmann; Cyst of the Maxillary Sinus, by Charles H. Knight; A Case of Abscess of the Frontal, Ethmoidal, and Maxillary Sinuses, by J. H. Bryan. *a.* Necrosis of the Middle Turbinate; *b.* Congenital Osseous Stenosis of the Naris, by A. B. Thrasher. *a.* A Naso-pharyngeal Cyst; *b.* An Oro pharyngeal Cyst; *c.* Fibroma Papillare, or True Papilloma, of Nasal Septum, by Jonathan Wright; Discussion. The Relation of Vasomotor Disturbances to Diseases of the Upper Air-tract, by F. H. Bosworth, W. H. Daly, and J. N. Mackenzie.

Dr. Oscar H. Allis has been awarded the S. D. Gross Prize of $1000 for an essay entitled "An Inquiry into the Difficulties Encountered in the Reduction of Dislocation of the Hip."

Meetings of State, National, and International Medical Societies:

	Meets.	Next meeting.
American Climatological Association.	June 13–15	Hot Springs, Va.
American Dermatological Association.	Sept. 17, 1895	Montreal, Can.
American Electro-Therapeutic Association.	Sept. 3, 1895	Toronto, Can.
American Microscopical Society.	August 21–23, 1895	Ithaca, N. Y.
American Neurological Association.	June 5–7, 1895	Boston, Mass.
American Ophthalmological Society.	July 24, 1895	New London, Conn.
American Orthopedic Association.	Sept. 19–21, 1895	Chicago, Ill.
British Medical Association.	July 30–Aug. 2, 1895	London, England.
Canadian Medical Association.	Aug. 28–30, 1895	Kingston, Ont.
Colorado State Medical Society.	June 18–20, 1895	Denver, Col.
Idaho State Medical Society.	Sept. 9–11, 1895	Boise City, Id.
International Congress of Dermatology.	August 4–8, 1896	London, Eng.
International Congress of Gynecology & Obstetrics.	September, 1896	Geneva, Switzerland.
International Congress of Hydrobalneotherapy.	1895	Ostend.
International Medical Congress.	August, 1896	Moscow, Russia.
Kentucky State Medical Society.	June 12–14 1895	Harrodsburg, Ky.
Maine Medical Association.	June 5, 1895	Portland, Me.
Massachusetts Medical Society.	June 11, 12, 1895	Boston, Mass.
Medical Society of Delaware.	June 11, 1895	Wilmington, Del.
Medical Society of the State of New Jersey.	June 25, 26, 1895	Cape May, N. J.
Medical Society of the State of New York.	Jan. 28, 1896	Albany, N. Y.
Medical Society of Virginia.	October	Wytheville, Va.
Medical Society of West Virginia.	June 26–28, 1895	Davis, W. Va.
Michigan State Medical Society.	June 4, 1895	Bay City, Mich.
Mississippi Valley Medical Association.	September 3–6	Detroit, Mich.
New Mexico Medical Society.	July 10, 1895	Las Vegas, N. M.
New York State Medical Association.	October 15–17	New York City
Ontario Medical Association.	June 5–6, 1895	Toronto, Ont.
Oregon State Medical Society	June, 1895	Portland, Ore.
Rhode Island Medical Society.	June 6, 1895	Providence, R. I.
Vermont State Medical Society.	October 10, 11	Burlington, Vt.
Wisconsin State Medical Society	June 19–21, 1895	Superior, Wis.

The American Electro-therapeutic Association, through its Standing Committee on Electrodes, has addressed a circular-letter to every accessible manufacturer of electro-therapeutic apparatus, with the view of obtaining their co-operation in securing the general adoption of:

I. Uniform connections and interchangeable electrodes: 1. Universal rheophore tip. 2. Universal aperture for same. 3. Universal attachment for electrolysis needles, etc.

II. Standard gauge of screw throughout construction, should screws be desired.

The committee was also instructed to request manufacturers to submit to it the various forms of electrodes now on the market; to test the same, and to report at the meeting of the Society to be held in Toronto during September, 1895.

Descriptions of gynecologic electrodes will be received by Dr. Lucy Hall Brown, of Brooklyn, N. Y.; of neurologic electrodes, by Dr. C. Eugene Riggs, of St. Paul, Minn.; of surgical electrodes and others not specified, with samples of rheophores, rheophore tips, sockets, and other connections, by Dr. Charles R. Dickson, of Toronto, Canada.

Meetings of Philadelphia Medical Societies:

	Meets.	Next meeting.
Academy of Surgery,	1st Monday of month, Oct.—June.	June 3
College of Physicians,	1st Wednesday of month, Sept.—June.	June 5
Section of Gynecology,	3d Thursday of month, Oct.—June.	June 20
Section of Ophthalmology,	3d Tuesday of month, Sept.—May.	Sept. 17
Section of Orthopedic Surgery,	3d Friday of month, Oct.—April.	Oct. 28
Section of Otology,	1st Tuesday of month, Oct.—May.	Oct. 1
Section of Surgery,	2d Friday of month, Oct.—May.	Oct. 11
County Medical Society,	2d and 4th Wednesdays of month, Sept.—June.	June 12
Neurological Society,	4th Monday of month, Oct.—April.	Oct. 18
Obstetrical Society,	1st Thursday of month, Sept.—June.	June 6
Pathological Society,	2d and 4th Thursdays of month, Sept.—June.	June 13

The Ontario Medical Association will hold its fifteenth annual meeting in the Council Buildings, corner Richmond and Bay Streets, Toronto, on June 5th and 6th. The program includes a large number of interesting papers and some special discussions.

The Craig Colony for Epileptics has had the sum of one-hundred-and-twenty-five-thousand dollars appropriated for its use during the coming year. The amount will be expended in getting the colony in condition to receive patients this fall.

Prof. Carl Thiersch, the distinguished surgeon and deviser of the method of skin-grafting that goes by his name, died at Leipsic on April 28th, at the age of seventy-three years.

Dr. Emil Noeggerath, distinguished for his investigations upon the subject of gonorrhea, and at one time Professor in the New York Medical College, died on May 3d at Wiesbaden.

Deputy-Surgeon John S. Billings, U. S. A., will upon his own request be placed upon the retired list next October. He has accepted the chair of hygiene in the University of Pennsylvania.

Dr. James C. Wilson, Professor of the Theory and Practice of Medicine in Jefferson Medical College, has been elected physician to the Pennsylvania Hospital.

THE MEDICAL NEWS.

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ORIGINAL ARTICLES.

SOME EFFECTS OF INFLUENZA ON THE HEART.[1]

BY JOHN L. HEFFRON, A.M., M.D.,
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FIVE recurrent epidemics of influenza in as many years have taught both the profession and the people many things. "Grip" is no longer spoken of flippantly as one of Nature's practical jokes. It has earned for itself the most respectful consideration from its victims and the earnest study of medical men. I propose to consider some phases of but one class of its many effects, and that one which, while it has not escaped attention on the part of medical observers, has been less generally discussed than almost any other, namely, the effects of influenza upon the heart. In order to bring the subject systematically before you, representative cases showing the various manifestations of the disease upon the heart that have come under my observation will first be given. These will be analyzed, with the intention of ascertaining how the given effect is produced, and, finally, some therapeutic deductions will be drawn.

CASE I.—On February 11, 1895, I was called to see Mrs. D. W., aged forty-eight years, of neurotic temperament, with a gouty family history, for whom I had prescribed more or less frequently during the past two years, for disorders of digestion and nervous disturbances, but whose heart has always been sound. She had been ill three days with a sharp attack of influenza. Her temperature was 102.5°. She had severe headache, backache, and pains in the limbs, with moderate catarrhal symptoms.

On my second visit she complained of precordial distress and some dyspnea, and of an unusual action of the heart. The pulse was rapid and quite strong. The area of precordial dulness was slightly increased. The cardiac impulse was rapid and powerful, and the apex-beat displaced slightly to the left. On pressure below the ribs, upward and to the left, considerable tenderness was elicited. There was a distinct systolic murmur heard most clearly over the apex. There was marked general prostration and an exacerbation of neuralgic symptoms in the abdomen, which she had had on previous occasions. The temperature did not increase above that first noted, and at the end of two weeks had returned to the normal. The catarrhal symptoms were never especially severe and yielded to treatment easily. The precordial distress and dyspnea on exertion were the symptoms of first importance and persisted after the disappearance of the fever, the characteristic pains, and the catarrhal symptoms.

The heart has never regained its normal condition. It is now enlarged, with the apex more distinctly displaced outward and a little upward, and the murmur is still distinct, though the rhythm is perfect, and the sense of distress has disappeared, except upon unusual exertion.

CASE II.—Mrs. N. K. W., aged about sixty years, has been an invalid for five years, having had successive attacks of bronchitis, pleurisy, with effusion and without, cystitis, persistent indigestion, and, through it all, an irregular heart with some hypertrophy, though no definite valvular lesion could be detected. During the winter she had been unusually well, though requiring occasional medical attention, up to February 18th, when she was attacked by influenza. She had very little fever, considerable pain at the outset, a violent catarrh of the bronchi, and very early mental disturbance, with many delusions, all of a happy character. The symptoms that caused alarm were the early appearance of dyspnea and precordial distress, while the action of the heart was most irregular and imperfect. The cardiac impulse was feeble and very uneven in force and irregular in rhythm, as it had never been before. The heart-sounds were faint and tumultuous. There was every evidence of insufficient heart-force. While the lungs were hardly dull at all, and the râles were the coarse mucous râles of ordinary bronchial catarrh, the skin was purplish, relaxed, and often bathed in perspiration, and the extremities cold. Remedies that we are accustomed to rely upon had almost no effect whatever, even temporarily. The disease progressed to a rapid termination on the 24th, six days after its onset, the heart stopping in diastole, and respiratory action continuing for some time after any action of the heart could be detected. During this last illness no murmur could be heard.

CASE III.—Mrs. M. A. G., aged thirty-seven years, a German woman with six children, well built, fleshy, ordinarily well, save occasional fainting spells, called me March 1, 1895. She had then had influenza for three weeks. On this day she was in bed, completely prostrated, not being able to lift her head. Her face was dusky, her expression that of perfect apathy, her temperature 103°, her pulse 140, very weak and somewhat irregular in rhythm and in force, and the heart-sounds were faint, but there was no displacement of the organ nor were any murmurs to be detected. The liver-dulness and the spleen were normal. There was no rash on the abdomen and there was no abdominal symptom, save vomiting. Her urine was scanty and heavy with urates, but contained no albumin and no sugar. There was but a very slight bronchial catarrh. The temperature remained above 101° for six days, and her pulse continued rapid and feeble. The temperature then gradually diminished, and on the ninth day was 97.5°, though no antipyretics, save small doses of salol, were given. As the temperature subsided, dyspnea and precordial distress were complained of, and, on the ninth day, repeated attacks of fainting with cyanosis occurred, during which it seemed as if she must die. The heart, beating very feebly and irregularly, responded to nitro-glycerin and caffein with whisky; and its action was maintained with small doses of digitalis.

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[1] Read before the Syracuse Academy of Medicine, April 2, 1895.

On the tenth day the temperature again rose to 101°, and continued above the normal for five days more, during which the heart was more regular and stronger and the pulse less frequent. On again attaining a normal temperature the attacks of cardiac dyspnea supervened. The temperature then rose to 103°, and has been variable, but above the normal, to the present time. During her own illness her husband has had acute pleurisy with effusion, and her youngest child croup, both of which affected her by increasing the temperature and the action of her heart, and causing a recurrence of vomiting.

CASE IV.—S. L., aged twenty-two years, a vigorous young man of good personal and family history, was attacked by influenza February 2, 1895. On my first visit his temperature was 103.5°, pulse 120, tense and strong, the characteristic pains marked, and the bronchitis very severe, involving the smaller bronchi, but not presenting areas of pneumonic infiltration. The case progressed satisfactorily, and the fever, with the other symptoms, terminated on the seventh day. With the subsidence of the fever there was excessive prostration, and the pulse, previously high, diminished to 46 beats per minute, though perfectly regular, and so remained for five days, when it gradually resumed its normal rate of 74.

CASE V.—H. L., aged forty-three years, a professional man of full habit, and good family and personal history, became a victim of influenza in January, 1895. The case presented no unusual symptoms until convalescence seemed well established, when the pulse became quite suddenly and without any undue cause very rapid, running up as high as 174 per minute, and, on exertion, to a rate much higher. This was accompanied by a condition of marked weakness and sleeplessness. Careful examination of the heart failed to detect any organic changes.

The case progressed in this way, with gradual improvement, for about a week, when it rapidly ameliorated and the pulse returned to its normal, 78 per minute, and the lost strength was regained at a rate that was quite surprising.

In looking over this group of cases cursorily, it is evident that we have examples of very different cardiac conditions, including diseases of the endocardium, of the myocardium, and of the nervous mechanism that controls the action of the heart.

Before studying these more minutely, it is well to state the groundwork of my belief that such changes as were wrought were dependent upon, and not incidental to, influenza. It is now generally accepted that there is a specific bacillus of influenza, and that it has been demonstrated by Pfeiffer and confirmed by Canon, and so is called the Pfeiffer-Canon bacillus. It is found not only in the sputum but also in the blood. It is grown with difficulty, except on agar smeared with the blood of the patient from whom it is taken. Perhaps because of the difficulty in growing it, there has not, so far as I know, been success in isolating the specific toxin which is generated in the development of this bacillus, but inoculation-experiments with cultures of this bacillus on apes and other animals have succeeded in reproducing the symptoms that are seen in the original manifestations of the disease; and that these are due to a specific poison, a resultant of the growth of a specific bacillus, is no more to be doubted than in tetanus, in which the demonstration is complete. As in other infectious diseases, this toxic substance circulates in the blood-current, and we know clinically that it affects a wider range of tissues and organs than does any other of which we are cognizant. In the etiology of endocarditis, both simple and ulcerative, the influence of the toxins of the several infectious diseases is recognized as paramount. In the cases caused by rheumatism it is questioned by good observers whether the disease is an actual rheumatism of the valves, or is here also produced by the irritant action of some specific poison in the blood, the resultant of the growth of some specific germ.

As in other infectious diseases, so in influenza, the left side of the heart is first and most seriously affected, and, if a valve is affected, that side of it which is toward the on-rushing current of blood is the one that most keenly feels and expresses the irritation of the foreign toxic substance. Although in influenza the number of reported cases of acute endocarditis that have come under my observation is not large, still it is sufficient to establish the fact that both simple and malignant endocarditis may be caused by influenza. In the first case reported it is positive that acute endocarditis, of a type not severe, was developed in the course of the attack of influenza. The patient had been under my observation for some two years, and because of the gouty family history, and of her own manifestions of rheumatism, the heart had been repeatedly and recently examined, with negative results. The patient had never complained of any symptoms even remotely suggestive of cardiac disease. There had been no recent slight illness. The symptoms manifested, and the results of physical examination, and the present condition combine to establish absolutely the opinion that acute endocarditis was produced by the poison of influenza, and that it has left a heart that has not yet and probably never will recover perfectly from its effects.

It is unfortunate that a post-mortem examination was not allowed in the second case presented. During the time of my care of this patient, a period of five years, the heart, though irregular in its action and somewhat hypertrophied, had been relied upon to carry her safely through the various diseases which she had developed. The physicians who had seen her in consultation had failed, as I had done, to diagnosticate any organic valvular lesion. I had often described her pulse as a "Lord Dundreary" pulse, for it had the peculiarity of gait of that celebrated character as portrayed by the lamented Sothern. There was sure to be a skip, but one never knew when to expect it, and sometimes the rhythm was completely interrupted by a series of agitated beats, very much like the steps of our hero when especially embarrassed. Digitalis steadied it, and it was frequently resorted to for this purpose. At the time of the attack of influenza the patient was better than for months, and I had seen her only at long intervals. Two days after the onset of influenza, with its catarrhal symptoms and the characteristic pains, the heart was prostrated. Its action was feeble, most irregular in rhythm and in force, and the circulation was carried on most imperfectly. There were early delirium and dyspnea, which deepened into orthopnea, so that in the last few days she could not breathe in the recumbent position, and was in constant labor to get breath at all. In this case, it seemed to me that the heart-muscle itself received the brunt of the blow, and, if a post-mortem examination could have been had, it would have been a disappointment not to demonstrate a diffuse myocarditis. That such an effect is possible seems reasonable from our clinical knowledge of myocarditis, depending as it almost always does upon the presence in the blood of a septic principle, and in at least some cases reported by Pawniski, of Warsaw, such results have been demonstrated as the effects of influenza.

In arriving at this conclusion, I am not unmindful of the very great difficulty in making an antemortem diagnosis of myocarditis, nor do I forget that the irregularity of the pulse, as observed for several years, was probably of neurotic origin. But the condition presented by this patient was so different from that of ordinary cases of heart-failure, not simply in degree, but in the character of the symptoms, and particularly in the action of the heart, that I cannot make myself believe that there was not some grave change in the validity of the heart itself; and if the absence of evidence of valvular disease is any proof that such does not exist, then the heart-muscle must have been the part that was involved.

Case III is a specimen of the more frequently observed cardiac complication in influenza of the typhoid type. It is doubtless due to the combined action of two causes: the heart-muscle itself is weakened by the long-continued fever and the deficient nourishment of the patient, and the nerve-centers, as well as the heart-ganglia, are weakened in the general prostration, so that in afebrile periods there occurs almost complete heart-failure. Many deaths have been reported in just such cases, and many other cases are reported in which the life has been saved only by the energetic use of the most powerful and rapidly acting cardiac stimulants.

Cases IV and V are examples of the disorders of the nervous mechanism controlling the rhythm of the heart. Many cases in these classes have been observed. There is but little question that the effect is due to the influence of the poison upon the nerve-centers or possibly to minute hemorrhages into the nerve-matter. If the function of the vagus is impaired, tachycardia results; if the effect is chiefly felt in the centers lower down, then bradycardia or cardiac irregularity would be produced. It is the rule that these manifestations occur late, at some period during or following convalescence, and these effects are often prolonged over a considerable period, even a year or more, though recovery almost always results in the end.

In most of the cases of influenza that we see there is a relaxed condition of the vascular system, to which attention should be drawn before making any observation on the treatment of these cases. Because of this relaxed condition of the arterioles and of the frequently observed weak heart, even early in the disease, it is never wise to prescribe any of the coal-tar preparations, before making a careful examination of the circulation of the patient, nor is it safe for druggists to dispense these remedies indiscriminately as they do. Indeed, it may be laid down as a law that it is only right to give phenacetin, antipyrin, or acetanilid in influenza when each dose is guarded by caffein or some equally good cardiac stimulant. Several fatalities have occurred by a neglect of this precaution, a precaution taught me by an instructive experience during the first epidemic in 1890. When used, the dose should not be large, three grains of antifebrin being an outside limit. For the same reason, the dilatation of the arterioles, digitalis is often least suited to this class of heart-weakness in influenza. If the heart-muscle is weak and its ganglia prostrated, the use of therapeutic doses of digitalis, by primarily contracting the arterioles, throws back upon the exhausted organ a weight of blood which it is insufficient to move, even with the added stimulation of digitalis, and it collapses. Certainly better results have been seen in my practice from the use of small doses of digitalis given with strychnin, than from the use of doses of ordinary size.

Strychnin is a remedy of very great value in these cases of cardiac depression. The experience of several epidemics has taught us that it is seldom desirable to use this drug for the usual nerve-prostration in the large doses necessary in the various paralyses following infectious diseases. Small doses given at more frequent intervals have given better results.

Nitro-glycerin has given good results in the cases of collapse, but, because of the vascular dilatation already present, it is not an appropriate remedy to use long, and it is inferior to alcohol, except possibly in emergencies.

Few therapeutists would be willing to give up alcohol entirely in the treatment of these cases. There may be discovered some efficient substitute for a pure whisky, or an old brandy, or a good sound wine rich in ethers; but the utterances of men both in this country and England, whom we all admire and revere, have failed to establish the fact that such a substitute has already been found.

Aromatic spirit of ammonia, ammonium carbonate and the chlorid have their place; but in my experience are most valuable in the cases presenting a high grade of bronchitis or broncho-pneumonia.

The proper nourishment of the patient is of the greatest importance. Because of the heart and its tendency to reflect the disturbances felt in the gastro-intestinal tract, the food should be easy of digestion, administered in small quantities and at such intervals as not to embarrass the digestion. Beef-juice, egg-albumin, and milk, predigested if necessary, may be depended on.

In a disease occuring so frequently and affecting so large a number of people at once, the physician, from sheer monotony and weariness, is in danger of making superficial examinations and of getting into a routine in his methods. Therefore it is that there are large possibilities of error in diagnosis and many chances for overlooking important lesions.

The subject discussed teaches the lesson that the heart should be continuously watched in every case of influenza.

A RATIONAL DIABETIC FLOUR.[1]

BY HEINRICH STERN, PH.D., M.D.,
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MEMBER OF THE NEW YORK COUNTY MEDICAL SOCIETY, THE MANHATTAN CLINICAL SOCIETY, THE MEDICO-LEGAL SOCIETY, ETC.

"GIVE us our daily bread"—this utterance of the faithful shows that bread is the recognized, most essential, and most important foodstuff to civilized man. In health and disease it forms his foremost nutriment. Thus by nature, habit, and custom humanity asks for bread and thrives on it, and when this article of food has been withheld or withdrawn from a person by famine, by high taxes, or by an over-zealous physician, that person might get along with other nourishment for a time, but will perish at the end from lack of proper food. The bodily constitution of civilized man demands some kind of breadstuff of which, it is true, it might be deprived temporarily and partially, but never for a long period or completely.

This fact has been recognized by some modern physiologists and observers who do not object to bread in small quantities as a part of the diet in diabetes mellitus. The complete and sudden deprivation of the system of breadstuffs it has heretofore been accustomed to, undoubtedly produces more harm in a diabetic patient than a moderate use of that article of nutriment. (To stop wholly the saccharine supply is also not what is wanted, for were we to do so we would finally arrest every function of animal life.) Neither on its duration nor upon the percentage of sugar depends the severity of diabetes mellitus, but upon the general power of resistance of the body and the vitality of the non-affected organs; and the power of resistance and vitality must be sustained, even if an additional one-tenth of 1 per cent. of diabetic sugar may be demonstrated in the urine.

With the view of supplying properly adapted and suitable breadstuffs for diabetes the so-called "Diabetic Flours" have sprung into existence; and it is claimed that they are free, or nearly free, from carbohydrates. All these flours contain, however, large quantities of starch—from 30 per cent. to 70 per cent., as Purdy puts it. The widely advertised gluten flour of one health-food company, for instance, for which it is claimed that it is entirely free from starch, contains 66.18 per cent. of that article. It seems beyond our means at the present day to extract to a sufficient degree the carbohydrates of the marketable grains; in fact, if a complete extraction of the starchy principles of our grains could be accomplished, there would be very little left to make a satisfactory article of food. Bouchardat's gluten flour is obtained by washing wheat flour. It is evident that only small quantities of starch can be extracted by this process. A method of extracting the starch from bread was recommended by Liebig. Thin slices of bread were treated with an extract of malt to convert the starch into sugar, which could be dissolved out by maceration and washing. The bran-bread of Prout, which contains a great percentage of cellulose, has not proved to be a desirable food for diabetics on account of its indigestibility and of its irritative action on the mucous membranes of the intestinal canal. The Soya bread and the aleuronaut bread of Ebstein have also been used in the dietetic treatment of diabetes without having achieved universal recognition and employment. The proportionally best substitute for wheat or rye to-day yet is the almond. Almond-bread was first introduced by Pavy. The almonds having been ground into small pieces undergo a process of maceration with acidulated water for the extraction of their sugar. If some butter and eggs be added to this almond-meal, a good-tasting bread can be baked, which, if not properly prepared, is very hard and oily, and not fit for digestion. Almonds, however, are very expensive, and this is one of the reasons that bread made from them is not more universally employed by diabetics.

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[1] Read before the Manhattan Clinical Society, April 16, 1895.

A long time since I recognized the fact that *a completely decarbohydrated meal at a price convenient to every one cannot be obtained from any of the cereals;* that such a completely decarbohydrated meal is *not essential*, but is even a drawback in a rational diet of the diabetic; and that a meal like that of the almonds, partially unoiled and with a small percentage of carbohydrates, at a mere nominal cost, is the desideratum. After a series of experiments I came to the conclusion that such a meal can be obtained from the peanut.

The peanut[1] (*Arachis hypogæ*), also known as ground-pea, ground-nut, earth-nut, goober, and pindar, is an annual, growing from one to two feet high; it has the peculiar habit of wintering its fruit underground. It is not a nut at all in the true sense of the term, and should be with more propriety called ground-pea. After the fall of its flower the peduncle elongates and bends downward, pushing several inches into the ground, where the ovary at its extremity begins to enlarge and develops into a pale-yellowish, wrinkled, slightly curved pod, often contracted in the middle, and containing from one to three seeds. When fully grown the pods are from one to two inches long and of a yellowish color.

More or less abundantly scattered over the roots of the peanut plant are warts of about the size of a pin head. These so-called tubercles are of great importance to the life of the plant. Within them, while in a fresh or growing state, immense numbers of minute organisms can be detected. These organisms live partly on the substance supplied from the roots, and at the same time they take from the air and elaborate for the use of the plant considerable quantities of nitrogen. In this manner a quantity of nitrogen is often acquired by the plant far in excess of the amount of that element contained in the neighboring soil. The peanut, though it has been cultivated for centuries in Eastern countries—in China, Japan, the East Indies, and Africa—seems to be a native of Brazil. Thus America, which gave to the world cotton, Indian corn, the potato, and tobacco, is also the home of an additional plant of commercial importance. The merits of the peanut, however, had been recognized much earlier in other parts of the globe than in its native country, and virtually only since 1866 has the crop become of importance in some parts of this country. Virginia, North Carolina, and Tennessee produce most of the peanut crop of the United States, which, on account of a wrong method of culture, is not so plentiful now-a-days as it has been in years past.

The most interesting point for us to consider is the chemic composition of the peanut. I abstain from giving the food-constituents of all the different parts of the peanut plant, the kernels being the only portion of the plant concerning us. We find in the Alabama peanut-kernel 10.88 per cent. of water, and in the water-free substance of the kernel 4.26 per cent. of ash, 35.37 per cent. of protein, 2.66 per cent. of fiber, 19.33 per cent. extract-free of nitrogen, 55.37 per cent. of fat, and 5.50 per cent. of nitrogen. The average of all available analyses of peanut-plants of different crops and different sections of the earth shows 29 per cent. of protein, 49 per cent. of fat, and 14 per cent. of carbohydrates in the dry material.

Peanut-meal (as known in commerce) is the remaining part (the residue) of the peanut after the oil has been extracted. The oil is extracted on a large scale in European countries and utilized as a substitute for olive-oil, for lubricating purposes, and in the manufacture of soap. The meal contains, as the averages of 2000 analyses show, about 52 per cent. of protein, 8 per cent. of fat, and 27 per cent. of carbohydrates, and is therefore a most concentrated and valuable animal food. The peanut-meal, or peanut-cake as it is commonly called, is of a quite agreeable taste and not very hard to digest. Following this is given a comparison made by Professor König, based on the price in Germany of the following twelve principal foods reduced to "units of nutrition:"

Comparison of the Nutritive Value and Cost of Twelve Principal Foods.

	Nutrive units per pound.	Cost per 1000 units in cents.
Skimmed milk	98.20	10.4
Skimmed-milk cheese	870.00	11.0
Full milk	155.50	11.5
Bacon	1257.70	15.5
Butter	1186.30	20.4
Veal	525.90	22.2
Beef	530.90	26.0
Peas	778.60	4.2
Potatoes	138.20	5.1
Rye-flour	603.60	6.0
Rice	534.60	10.0
Peanut-meal	1425.00	3.0

This shows that peanut-meal is the most nutritious and the cheapest of this list of foodstuffs.

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[1] The following data and points of information are obtained from Farmers' Bulletin, No. 25, published by the U. S. Dept. of Agriculture, 1895.

Satisfied that the peanut is one of the most perfect, and at the same time one of the cheapest foodstuffs known to us, a foodstuff abundant in nitrogenous and fatty matter, but very deficient in carbohydrates, I began to utilize it with diabetic patients, and my method of preparing what I call the "diabetic peanut-flour" is a very simple and empiric one, and only destined to be employed domestically. I do not intend to give in the following a process of manufacture on a large scale; but no doubt, if this peanut-flour should prove to be a permanent success in the dietetic treatment of diabetes, the proper means to obtain the flour in large quantities can be easily devised.

The peanut-kernels, including their inner coating, which is also nutritious and not very abundant in carbohydrates, are put in a tin kettle, into which small holes have been previously made. This is kept uncovered and placed on or into a pan filled with water, and this has to be kept boiling for about half an hour to allow partial extraction of the superfluous oil. After the kernels have been dried they are pounded into fine particles with the aid of a rolling-pin. The pounded or bruised kernels are then placed in boiling water acidulated to some degree with tartaric acid or vinegar, preferably with the latter. The boiling in the acidulated water has to be continued for some time for different reasons:

1. For the extraction of saccharine elements, occurring to some amount in nuts of American growth. (Peanut-flour naturally contains proportionally small quantities of saccharine principles, which have to remain to some extent in the flour for reasons given.)

2. To overcome the smell and taste characteristic of the peanut.

3. To prevent emulsification of the remaining oil, which, to some degree, is essential to a rational diabetic food, as fats must supply the deficiency of the carbohydrate elements. (An emulsifying process will otherwise take place immediately on the addition of water, as great quantities of albuminous matters are present.)

It is true that a partial emulsification of the oil might relieve the pancreatic juice of some work, and this might be especially beneficial in such grave cases of diabetes mellitus in which the pancreas seems to be involved. I leave it to future investigation to determine whether the oil in peanut-flour shall be introduced in its natural state into the alimentary tract or in the form of a partial or complete emulsion.

Having undergone a thorough boiling with acidulated water, the ground kernels are subjected to dry heat, to effect complete evaporation of that fluid; but great care must be exercised that they do not become browned or roasted. An additional treatment with the rolling-pin will produce nearly as fine a flour as the common wheat-flour of commerce.[1]

With apparatus such as the household furnishes a flour such as the mills are capable of producing on a great scale cannot be expected to be produced. This is especially true with the hydrocarbonization (unoiling) of the flour. From 30 to 40 per cent. of the oil I deem necessary for a complete and rational diabetic food. More hydrocarbons are not required and would interfere with digestion. It is not possible to control the unoiling by the described domestic process and to determine with any degree of certainty the percentage of oil extracted; if the flour is manufactured by mills, however, this could be readily controlled and ascertained. The most simple process of extracting the oil, when manufacturing the flour on a large scale, is by pressure, either by the employment of the cold or the warm process; the pressure can be so regulated as to extract just the amount of oil that is not wanted.

I have made use of the flour in different ways, the most simple of which is in the form of a porridge, some milk being added to it. Bread and biscuits can also be baked from it, but the nicest and most easily digestible form in which to utilize it is, I think, the German pancake. Every housekeeper understands how to make the latter, and a tasty and always fresh piece of pastry can therefore be produced on short notice.

I have used this flour with four diabetic and a number of other patients of mine. In the non-diabetic cases, mostly tuberculous in character, I obtained satisfactory results, inasmuch as digestion was not to any extent taxed, and in some cases the weight of the patient did not decrease, while in one instance there was actual gain in weight noticed.

The first diabetic patient to whom I recommended the flour was also the first person whom I know to have made use of it. Right at the outset it turned out to be a complete failure, as the digestion became very much impaired, thereby aggravating the general condition of the patient, an old man. A more careful and rational preparation of the flour, however, and the employment of smaller quantities when starting with it, increased its digestibility, and to-day this patient enjoys, as far as circumstances permit, a comfortable state of health. The other three patients also thrive well on this flour, the German pancake being the usual form in which they employ it. In conjunction with eatables made of this flour I allowed those patients only such foodstuffs as are generally recognized as permissible in diabetes mellitus. I have done this, not because I am a believer in the complete exclusion of carbohydrates in diabetes, which I am not (fats and even nitrogenous substances are capable of producing glycogen), but to investigate the intrinsic value of peanut-flour as a food and its ability to reduce the glycogenic sugar of the urine. In the last point, however, my researches only began at a late date and practical results I cannot offer to-day.

After my bad experience in the very first trial I accustomed the patients gradually to the flour and started in every instance with 15 grams a day, gradually increasing the quantity to 25 grams daily in the second week, 35 grams in the third week, and so forth. I did not experience any more gastric disturbances or diarrhea by the employment of the peanut-flour than is the case when using an absolutely animal diet.

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[1] Samples of the peanut-flour were passed among the audience and different tests were applied to it, to the satisfaction of those present.

If we accept the theories advanced by modern investigators in the dietetic treatment of diabetes mellitus, that a suitable and wholesome diabetic food must be easily digestible, abundant in fatty and nitrogenous, and deficient in saccharine and starchy substances, we have to consider peanut-flour a rational and logical foodstuff.

LEXINGTON AVENUE, COR. 89TH STREET.

A REPORT OF A SERIES OF CASES OF LARYNGEAL DIPHTHERIA TREATED WITH THE ANTITOXIN, WITH AND WITHOUT INTUBATION.[1]

BY EDWIN ROSENTHAL, M.D.,
OF PHILADELPHIA.

THE various historical discoveries in bacteriology that have led to the serum-treatment of diphtheria are now well known and are the common property of the medical world. I am a firm believer in the doctrines of the new pathology, and as such have had no fear in practically applying them.

The immunity of individuals against disease is understood to depend upon the destruction by certain agents of the supposed living cause of the disease. These agents may also act by hindering the growth of the living cause; by destroying its infectious properties; by the destruction of the poisonous material produced in the infected organism; or by imparting a higher degree of resisting power against the action of this poisonous material.

In April, 1893, Behring and Kossel published the results obtained in the treatment of thirty cases of diphtheria by the injection of so-called antitoxic serum. The serum was obtained from the blood of animals rendered immune to the disease by the prolonged injection of minute but gradually increasing quantities of diphtheria-toxin: a fluid obtained by the cultivation of diphtheric bacilli in nutrient broth. The success of the treatment according to Behring and Kossel was very remarkable, and other observers, notably Ehrlich, Wasserman, Roux, and now a host of others, have confirmed these results.

Independent clinical observations on the use of antitoxin have been made by myself in those cases only of diphtheria wherein the larynx was the site of the disease, and which may have necessitated intubation or not. I have had the very kind co-operation of my friends, Dr. H. H. Freund and Dr. L. Wolff. Their cases were published in THE MEDICAL NEWS, February 9 and March 2, 1895. In the bacteriologic examinations my friend, Dr. A. Klein, has lent his valuable services, and between us we have tested the antitoxin in other varieties of diphtheria, as well as its power of immunization.

Those familiar with diphtheria, especially with the laryngeal complications, know well its course and sequelæ, and, after having tried the various methods of treatment, they now make use of the antitoxin, and marvel at its peculiar specific action and at the results attained.

I report to-day twenty-two cases of laryngeal diphtheria, some of them complicated. Of this number, fourteen were females and eight males. Two died, a mortality of 9 per cent.

For analysis I divide these cases into two groups—those intubated and those not intubated. Of those not intubated—ten in number—I have no mortality to record—all recovered. Of this group, seven were females and three were males. There were three between one and two years old, three between two and three years old, one between three and four years old, one between four and five years old, one between five and six years old, one between six and seven years old.

The average time required for the relief of stenosis in this group was three days. These cases responded more quickly to the antitoxin, though the fall in the temperature and pulse-rate was different from that cited in recorded cases—never under from thirty-six to forty-eight hours—and in other infections (pneumonia) it continued for a week or more.

Of those intubated—twelve in number—two died, a mortality of 16 per cent. Taking into consideration the average mortality of cases intubated without this method of treatment—72 per cent.—we can very well appreciate the difference.

My own statistics in a recent paper on one-hundred cases of intubation (*Medical Bulletin*, September and October, 1894) showed a mortality of 62 per cent. The average mortality in cases intubated and treated with the antitoxin shows a marvellous reduction in the death-rate. I refer to the statistics of Ehrlich, Wasserman, and H. Kossel, of Katz and Aronson, and of Roux, Martin, and Chaillon. Of thirty cases of laryngeal diphtheria treated by H. Kossel at the Charité, Berlin, nineteen recovered—twelve without operation. The mortality with tracheotomy was 61 per cent. The cases, however, were seen late, and ten of the eleven deaths were seen after five days, and were septic. I do not think Kossel practises intubation.

Of the cases intubated, five were males and seven were females. Of the males two died—one between one and two years old, and one between two and three years old. The ages were: four between one and two years old, four between two and three years old, one between three and four years old, one between four and five years old, one between five and six years old, one between six and seven years old.

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[1] Read before the Pennsylvania State Medical Society, Chambersburg, May 23, 1895.

The average time for the tube to remain in the larynx was four days. Of course, there are exceptions—one case needed the tube over twelve days. Such improvement as marked those cases not intubated was noticed in these, but to a slighter degree, and the temperature was not reduced until the third day. The pulse always remained high. When other infection (pneumonia) existed the temperature, pulse, and respiration remained extremely high for several days—even after all visual traces of the diphtheria had disappeared and the tube was withdrawn. When pneumonia came as a sequel the temperature rose to 106°, the pulse to 180, the respiration to 80. Under appropriate treatment these alarming symptoms disappeared and the patients recovered.

The after-treatment of those intubated was precisely the same as in those cases in which antitoxin had not been used. The room was kept at a suitable temperature, a large kettle with water, to which was added a considerable quantity of salt, was constantly boiling in the room, the air thereby being kept moist. The throat was kept clean with a spray of hydrogen dioxid once in three or four hours, or the child was permitted to gargle with a solution of hydrogen dioxid or of boric acid. Food was given at stated intervals, not only such food as was generally thought proper, milk, beef-broth, and the like, but anything the child craved, such as ice-cream, bread, cake, coffee, candy, oranges, or the like; nor were any bad effects noticed from this procedure, for all the cases recovered. It would appear strange that children with tubes in the larynx should find great difficulty in swallowing liquids, when bread, cakes, and the like, moistened in milk or coffee, were swallowed with the greatest ease.

In two cases, notably those of Dr. Metzler, difficulty was met with in giving a sufficient amount of nourishment. Recourse was had to rectal feeding, Dr. Metzler using a mixture of milk and egg, properly prepared, to which were added three drops of laudanum for each injection. Experience has taught me that under the antitoxin-treatment all stenosis should disappear on the third day; for that reason all the tubes were withdrawn on the fourth day—if not previously removed by coughing—and were only reinserted if required; this was only necessary in three cases when daily removals were practised.

The temperature and pulse-rate remain high in cases intubated; but when this continued after the third or fourth day—probably due to streptococcus or pneumococcus infection—the tube was withdrawn anyhow and appropriate treatment was pursued.

As to the antitoxin used, most of my work was done with Behring's antitoxin, of which I always had a constant supply—through the kindness of a relative, Geheim Sanitäts rath, Dr. A. Baer, of Berlin—though I have treated cases with the antitoxins of Aronson, Gibier, and McFarland, all cases recovering. I must acknowledge equal value to each, although that of Behring seemed to act more quickly and more decidedly, and has thus received more confidence from me.

As to the method of using, if the child was very young and weighed little, one bottle of Behring's No. 1 was injected in one dose. If any complications existed, as infection of the pharynx, tonsils, or lymphatics, a bottle of No. 2 was used in one injection. If, after twelve or twenty-four hours, improvement was noticed, no more antitoxin was used. But if the disease seemed to progress, or the symptoms became more urgent, another injection of No. 2 was given. Two injections sufficed to cure in the worst of my cases. My injections were all made in the back, to the one side or other of the spine, under the scapula. The parts were previously washed with alcohol, soaked upon sublimate cotton, and after injection the parts were sealed with iodoform-collodion.

The indications for intubation are the same as in cases without the use of the antitoxin, with this exception: the earlier the antitoxin is used, the less need is there of intubation. However, urgent necessity—by reason of the membrane becoming loosened and thus causing suffocation—may require intubation at any moment; for the first twenty-four hours, therefore, constant visits, say, once in two hours, may be required. When, however, the treatment is begun late, say on the fifth day of the disease, my rule or practice would be to intubate first, even before injection.

My conclusions drawn from the use of antitoxin are these:

The antitoxin is a specific in diphtheria. In early cases—those seen one or two days after infection—no death-rate should be recorded.

In laryngeal diphtheria the antitoxin is specially indicated. It should be used in every stage or date of the disease, no matter how late we see the case; its influence can be proved, for cases of laryngeal diphtheria perish from suffocation long before any toxic symptoms could be manifested; for that reason I would strongly urge the necessity of prompt intubation when indicated, even before the injection of the antitoxin is made.

In conclusion, I would emphatically reiterate that in early cases no death-rate should be recorded; and for that reason would say: Do not delay or hesitate because the patient's condition is not so bad, or because he might get well anyhow, but use the antitoxin at once. The earlier its use the more certain its success.

517 PINE STREET.

GALL-STONES WITHOUT COLIC.

BY A. L. BENEDICT, A.M., M.D.,
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THE following brief paper is presented, not so much to throw light on the diagnosis of the condition considered as to call attention to an unsolved problem, with the hope that others may be able to aid in its exposition. The text-books are almost uniformly silent as to the diagnosis of biliary lithiasis in the absence of colic. True, it is usually intimated that gall-stones may exist without colic, but, if the matter of diagnosis is considered at all, it is in such vague terms that the average man gains little aid. Partly from faulty teaching, partly from the necessity of making rudimentary instruction as simple as possible, even at the sacrifice of some details, partly from carelessness in observing cases and of noting the results of autopsies in connection with life-histories, there is a prevalent idea that the occurrence of gall-stones without colic is, at least, rather unusual. Starting with the idea that such a condition is a rarity, I have gradually veered around to the belief that even a majority of cases of biliary lithiasis may be unattended by marked symptoms. It would seem that one or more attacks of biliary colic would leave such an impression on the minds of a patient and the members of his family that the history would emphasize so painful an occurrence, even after the lapse of a considerable time. Moreover, biliary colic does not usually occur till the patient is mature and surrounded by a family. I have noticed biliary calculi at a number of autopsies without being able to obtain a history of hepatic colic. Such an experience, however, can only serve to support a general impression; it cannot be safely asserted in any given case that the patient had never had colic simply because, in a few days' attendance before death, his physician had not been informed of such an attack, or because inquiry after an autopsy failed to elicit the recollection of such trouble by some member of the family.

My attention was first directly called to the occurrence of biliary calculi, without previous colic, by an autopsy performed for the late Henry F. Formad in West Philadelphia.

The patient was a middle-aged woman in good circumstances, who had died after a long term of partial invalidism. For a week or more before death she had vomited blood and passed tarry stools. The hemorrhage was found to be due to a large ovarian cyst which had opened into the colon, blood being found throughout the gastro-intestinal tract. The gall-bladder contained about two-hundred gall-stones, the largest of the size and shape of a hazel-nut. Though the patient had been under the care of several prominent physicians no history indicating colic could be obtained. The stones were of a greenish color.

The second case was that of an old man who was treated for several minor ailments occurring in the course of carcinoma of the penis, for which operative relief was refused. Death resulted from an intercurrent broncho-pneumonia, the diagnosis being verified by the autopsy. The pericardium was normal, the heart a trifle large. There was no sign of atheroma except a small calcareous deposit in one of the sinuses of Valsalva. There were firm antemortem clots leading from each ventricle into the corresponding artery. From the left ventricle there extended a white clot eighteen inches long, showing the branches of the arch of the aorta and several of the bronchial arteries. The liver was slightly indurated and was deeply grooved, corresponding to the angles of the sixth and ninth ribs. The great omentum was adherent to the anterior abdominal wall. The stomach showed a constriction about a third of the total distance from the pylorus to the left end. This constriction was no more marked than I have found by auscultatory percussion of the living stomach, but more so than is laid down by the *Anatomies* as a normal condition. The gall-bladder was enlarged and distended with bile containing some mucus. There were two good-sized facetted gall-stones of reddish color. The kidneys were both somewhat sclerotic, the capsules stripping with difficulty.

It will be noted that the first patient, who had no particular lung-involvement, had gall-stones of a dark-green color, indicating oxidized bile-pigment, while the second patient, who died of apnea—although the broncho-pneumonia would scarcely have been sufficient to kill a more vigorous person—had gall-stones of the yellowish-red color typical of deoxidized pigment.

The only symptom that could be considered significant, so far as the lithiasis was concerned, was a dull pain with some tenderness in the region of the liver, and not limited to the immediate locality of the gall-bladder.

My third case was that of a woman, aged about thirty years, who had an abortion at the second month. She had had four children at term. I saw her on the day after the abortion, and, with the history of a spontaneous miscarriage occurring so early and with the description of the embryo coming away enclosed in its membranes, I contented myself with vaginal and uterine irrigation. It was also considered that the patient was well known, that her statements were likely to be truthful and her observation accurate, on account of some experience with labors and miscarriages. A day or two later, the temperature rising, the uterine cavity was curetted and the irrigation repeated. However, a pyemic condition gradually developed, and the patient died about ten days after the abortion.

It was learned later that the abortion had been induced. A peculiar fact about the fever was that it ran in regular periods of twelve hours, suggesting a double remittent. There was also the history of malaria some years previously, before the patient moved to Buffalo. Those who believe that "malaria jumps on and rides" when any other disease is in progress would consider this case an illustration. Personally, I feel that one so inexperienced in the matter of malarial fevers as a Buffalo physician must be cannot judge between the excellent authorities who believe in this malarial influence on the course of other diseases and the equally good authorities who laugh at the idea. During the course of the fever the patient complained bitterly of a dull, nagging pain in the side, over the liver. The autopsy revealed the presence of several gall-stones.

Case IV was that of an elderly gentleman who was operated on by an acquaintance for stone in the bladder, first by litholapaxy, and later by section. At the time of the operation I made the tentative diagnosis of hepatic sclerosis, although the liver was of normal size. The patient's complexion was sallow and somewhat pallid. He had been very temperate in the use of liquors, though formerly an army officer, but he was described as a glutton in his habits of eating. Death occurred from shock several hours after the second operation. I am inclined to think that the shock was largely due to the hepatic disease. I was invited to attend the autopsy, which was held to investigate the prostate and bladder, but the pathologist was induced to continue the section so as to expose the stomach and liver. The former was slightly catarrhal, the latter of a grayish-yellow color and somewhat sclerotic. The gall-bladder contained six nearly spherical calculi, about the size of cherries, and several smaller concretions. In color they were red, with occasional dark-green spots, the latter appearing to be the original color, since they were depressed from the general contour.

In another case of biliary calculi without colic the principal symptom was vomiting, not satisfactorily explained by the condition of the stomach itself, though there was slight gastric catarrh.

The points to which I wish to direct particular attention are these:

1. While it is well known that biliary calculi exist in persons who have never suffered from colic, the diagnosis in such cases is at present usually not made till the autopsy.

2. It would appear that dull pain in the region of the liver and vomiting are symptoms of biliary lithiasis.

3. The gall-bladder is not usually palpable; it might have been felt in the first case, but not in the other four, nor in other cases not mentioned here.

4. The color of the calculi seems to indicate the oxygenation of the system, bilirubin being the unoxidized pigment, biliverdin the oxidized form. Unless there is some marked respiratory disease or circulatory enfeeblement, the color will be that of biliverdin.

It must be understood that these statements are not made dogmatically, but rather for the sake of condensing the matter into the form of propositions, to be verified or disproved later.

[NOTE.—Since the preparation of this article I have learned that the fourth point has been anticipated by Dr. Arthur Gamgee. Some of my medical acquaintances had considered it such a ridiculous assumption that I committed myself to it with considerable hesitation.]

CLINICAL MEMORANDA.

INGESTION OF ONE-HALF OUNCE OF CARBOLIC ACID; RECOVERY.

BY R. E. LEWIS, M.D.,
OF MACOMB, ILL.

ON the evening of April 7th, at 10.45 o'clock, I was called in haste to see a young lady who, as was supposed, had taken poison with suicidal intent. Upon my arrival I found a fairly well nourished girl of eighteen years in a comatose condition, with complete muscular relaxation of the entire body. The pupils were of normal diameter, but did not respond to light. A great quantity of saliva and mucus was flowing from the mouth over the shoulder and arm and on to the bed, but no characteristic odor could be detected from it. The mouth was thoroughly examined, but showed no trace of what had been taken. The respirations, numbering forty per minute, were labored, and the pulse was very intermittent, rapid, and weak; so irregular was it that repeated attempts at counting it were unsuccessful. The whole body was bathed in cold sweat, and cyanosis was well marked both in the face and extremities. The picture presented the appearance of a sudden and unavoidable termination in death. No one knew how long the girl had been in this condition, nor could I ascertain what she had taken.

Apomorphin $\frac{1}{10}$ gr. was administered hypodermically, and only partially emptied the stomach in about eight minutes, but owing to the already depressed condition I refrained from repeating it and turned my efforts to stimulation.

From this time until 2 A.M. nearly three ounces of whisky were administered hypodermically, when the pulse and respiration became somewhat better, and the cyanosis began to disappear. Nitro-glycerin $\frac{1}{100}$ gr. was also given, but without appreciable effect. The heat of the body was maintained by hot-water bottles, and consciousness was regained by 4 A.M., but articulation was impossible.

The pulse now stood at 130 per minute, but was regular and stronger. It remained here for three days, when it began falling day by day until it reached normal at the end of a week. Digitalis was administered every two hours until my return at 10 A.M. At this visit I found the girl suffering from severe pain and tightness in the chest, accompanied by a distressing cough, which failed to raise anything. Both lungs were filled with mucus, and moist râles were audible over their entire surface. Morphin $\frac{1}{16}$ gr. every two hours was sufficient to control the cough and afford some rest.

During the next six days the patient expectorated large masses of mucus and blood, which were so very thick that they resembled masses of broken-down lung-tissue, and her temperature ranged from 100° to 101.5°. There were some vomiting and pain in the stomach, but these were easily controlled by ten-grain doses of bismuth, and she was kept on a liquid diet for a week, during which time $\frac{1}{30}$ gr. doses of strychnin three times daily were administered.

At the termination of a week her lungs had pretty well cleared up, the pulse had become normal, and she was feeling quite well, except that she had lost her voice. It is still absent at this writing.

After her recovery she informed me that she put a tablespoonful of carbolic acid into a cup of water, and drank it at nine o'clock that evening, which was one-and-three-quarters hours before I saw her. This accounted for the absence of its action upon the mouth and the few gastric symptoms present. The lungs suffered acute inflammation as a result of the drug being eliminated mainly through them, as the urine was repeatedly examined and showed no renal inflammatory process at any time. The girl was in the fourth month of pregnancy at the time the poison was taken, and no disturbance has yet shown itself in this respect.

This case I consider of interest from the fact that the acid, in a dose that ordinarily would prove fatal, was taken in its most favorable form for complete absorption, and that the length of time elapsing from its ingestion until any assistance reached her was sufficient to bring a large part of it into the circulation.

TORTICOLLIS: ITS PERSISTENCE AFTER OPERATION DUE TO ANOMALOUS NERVE-SUPPLY.

BY A. H. P. LEUF, M.D.,
OF PHILADELPHIA.

In the *American Journal of the Medical Sciences* for January, 1895, appears an article on "The Operative Treatment of Spasmodic Torticollis, with Cases," by Drs. Richardson and Walton of the Massachusetts General Hospital. In this, on page 32, reference is made to the anomalous origin of the spinal accessory nerve from the anterior loop of the second and third cervical nerves. This was found once in a dissecting-room subject. They suggest that a similar anomaly was probably present in the case reported by Dandrige, and accounts for the failure of the procedure.[1]

The practical bearing of a knowledge of these anomalies upon practice makes a record of similar experiences desirable, and hence my contribution of the following case.

During the year 1881 I was requested to examine the body of an elderly man who had at last succumbed to the strain of a spasmodic torticollis, which persisted despite the trial of every known mode of relief, including two operations, in one of which the spinal accessory was severed upon its entrance into the sterno-cleido-mastoid, and during the other upon its emergence from this muscle. There was, however, no relief.

At the autopsy I found that the abnormal nerve-supply to the affected muscle came from the anterior branch of the first cervical as it passed down in front of the transverse process of the atlas. It was fully one-half the size of the spinal accessory, and entered the sterno-cleido-mastoid from its inner side at about the middle. One-half of the nerve supplied the muscle, while the other half passed subcutaneously forward to the skin over the larynx. This occurred on the right side.

In the dissecting-room it was noted that the entire spinal accessory in this case was derived from an abnormal source, whereas in my case the spinal accessory appeared normal in all its relations, especially to the operator, who could not suspect at the time the accessory supply from the first cervical. As to whether Dandridge found the spinal accessory or not is not stated by Drs. Richardson and Walton. Very likely there are more cases of this kind, and if so, they should be reported.

In a brief search I find no satisfactory information concerning abnormal nerve-supply to the sterno-cleido-mastoid. In view, however, of the origin of the spinal accessory from almost the entire length of the cervical portion of the cord, careful research upon the cadaver, if requisite, may reveal many anomalies similar to the one I have herein reported. In all probability the accessory slip from the first cervical in my case was a deflected root of the spinal accessory, which, instead of passing upward into the cranium with the other accessory fibers, took a direct course outward with the first spinal nerve, from the descending loop of which it followed the shortest course to its destination. What more likely, therefore, than that any of the roots of the accessory may occasionally take a similar direct route?

It seems to me that the failure of operative treatment of torticollis due to sterno-mastoid contraction should be followed by the careful raising of this muscle from its bed in the upper third of its length with a view to discovering and severing accessory nerve-supplies.

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PURPURA HÆMORRHAGICA WITH CEREBRAL HEMORRHAGE.

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FIRST LIEUTENANT AND ASSISTANT SURGEON, U. S. ARMY,
FORT WAYNE, MICH.

E. G. J., aged thirty-eight years, a Swede, presented himself for treatment March 27, 1895, complaining of a persistent oozing of blood from the cavity of the second right upper molar. The tooth had been extracted on the previous day, and the hemorrhage had continued ever since. Under treatment with Monsel's solution locally and sulphuric acid and ergot constitutionally the hemorrhage ceased in a few hours. The man was kept under observation until the 31st, but there being no recurrence up to that time he was discharged. On April 13th he again applied for treatment, complaining of a peculiar weak feeling in the legs and stating that there were some spots on the skin. Examination revealed a marked case of purpura, the petechiæ being large and numerous and extending from the ankles to the middle of the thighs. Under treatment they underwent the usual changes and were rapidly disappearing, when on the afternoon of the

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[1] "Operative Relief for Torticollis," Trans. Amer. Surg. Assoc., 1880, p. 500.

16th he complained of severe headache, and went into a convulsion, which was followed by a comatose condition, with stertorous breathing, unequal pupils, the right being dilated, and left hemiplegia. Consciousness returned in an hour, as well as power on the affected side. After about two hours of apparent improvement the man relapsed into his former condition and remained so until April 20th, when he died. During this time there was incontinence of urine, which was hemorrhagic in character. The rectal sphincters were in a normal condition.

For some years previous to death the man had had a mitral regurgitant murmur, with compensatory hypertrophy, and, though noticeably anemic, had been regularly performing all his duties without complaint. There was no history of previous persistent bleeding and no specific taint. The family history was good, as far as could be ascertained.

At the autopsy, made thirteen hours after death, the left ventricle was found greatly hypertrophied, with vegetations on both aortic and mitral valves, the latter being bound down by adhesions. The right ventricle was dilated. The lungs were normal. The kidneys were contracted, their capsules adherent, and small cysts were scattered through both. The liver and spleen were normal. A large hemorrhagic extravasation was found over the right cerebral hemisphere, and a clot of the size of a hen's egg in the right middle lobe from rupture of a branch of the middle cerebral artery; the hemisphere itself was badly broken down.

INVERSION OF UTERUS FOLLOWED BY DEATH.

BY EUG. A. CROUSE, M.D.,
OF GRUNDY CENTER, IOWA.

MRS. P. was confined Monday, April 1, 1895, with her first child, and there was nothing unusual in the labor, which lasted a few hours. The placenta passed away in a short time, and there was no flooding or excess in flowing at any period of her sickness.

Through the courtesy of her attending physician I was called in counsel two days later, as he stated that the uterus was inverted. Upon examination I found a relaxed and flabby uterus with complete inversion, almost filling the vagina, and the inverted fundus presenting at the vaginal outlet. The os was large and patulous. There was no pain except during manipulation of the organ. After one or two unsuccessful attempts in other ways, I made a cone of my thumb and fingers, and by steady, firm pressure with one hand, and with the other making counter-pressure above the pubis, I succeeded in perfectly replacing the uterus, retaining my hand in the cavity for a short time, which brought on some slight contracting pains.

There followed decided symptoms of "shock," as shown by pallor of the countenance, anxiety, a soft, rapid pulse, coldness of the body, and weakness.

We could not determine definitely how long the patient had been in this condition, but we think at least from the morning of April 2d.

We gave the woman tonics, stimulants, ergot, and nourishment freely, with antiseptic vaginal douches. All of our efforts, however, were unavailing, and she died on the afternoon of April 4th.

NEW DEVICE.

A COMBINED FACE-GUARD AND TONGUE-DEPRESSOR.

BY S. SEILIKOVITCH, M.D.,
OF PHILADELPHIA.

EVERY physician who has to deal with a diphtheric patient tries to prevent the expectoration of particles of membrane or sputum into his face; this he usually accomplishes by turning away his head, but, by doing so, he is still not entirely safe.

The use of a piece of glass for this purpose as a protector, as suggested by Dr. James Ely Talley (MEDICAL NEWS, January 12, 1895), is not a new idea. As adjusted by Dr. J. Madison Taylor, a second person is required to hold the glass, and this may greatly interfere with the movements of the physician or with the rays of light, and thus prove very inconvenient. If the glass be held in the physician's hand—both his hands are occupied, as with one he fixes the tongue-depressor. Dr. Talley attaches the glass to the band of an ordinary head-mirror, thus freeing one hand and facilitating the work. This is a very good plan, as the guard is always in position, because it moves with the head in the desired direction, and the hands are thus kept free.

So long as we have nothing better we do not look into the disadvantages of a certain device, and we are satisfied with the advantages. The disadvantages of a face-guard attached to the band of a head-mirror are as follows:

1. It may be impossible to use the head-mirror under certain circumstances, and when removing the glass guard and holding the mirror to the band one meets again with the inconvenience of a second person holding the glass guard; if such an assistant is not present, the operator's hands are not both free.

2. The vapor covering the glass from the patient's breath spoils the clearness of the picture of the fauces.

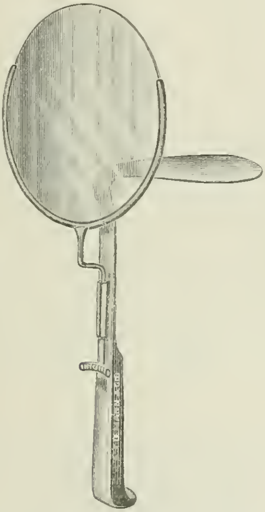
3. The room may be warm, and if one sweats, no matter how light the protector, one feels as if a load were about the head; one is prevented from wiping the sweat from the face or from adjusting one's spectacles, etc.

4. Sometimes one must wear the protector for a long time, or be bothered by taking it off and refixing it again.

A "combined face-guard," or a "face-protecting tongue-depressor," to be described, will in most cases prove of utility by obviating the disadvantages of the ordinary face-guard. It is, I believe, simple, convenient, and useful. It consists of six pieces: a round glass, a frame, a sliding-rod, a thumb-piece, an open clamp or spring-groove, and a tongue-depressor.

The glass is round, of moderate thickness, so that it will not break easily or make the instrument too heavy; it is five inches in diameter, thus covering the entire circumference of the patient's mouth and not allowing any expectoration to strike the physician's face. The frame is made of metal, half-moon-like round, grooved in the inside, into which the glass is imbedded, thus strengthening the glass; should the glass break a new sheet can be slipped into the frame and cannot fall out. The sliding-rod, which is attached to the lower edge of the frame, is bent so as to stand out at least half or nearly three-quarters of an inch from the spatula, thus preventing it from striking the spatula when making lateral movements. The open clamp or spring-groove is attached to the tongue-depressor; it hugs the sliding-rod and allows it to slide and stay in any position. The thumb-piece is attached to the lower end of the sliding-rod which is in the spring-groove; it rotates the glass, and slides it up and down; it is taken apart by sliding the thumb-piece through the clamp. The tongue-depressor is made of solid metal; the handle is hollow, thus reducing the weight of the instrument.

Practically, this instrument consists of two parts: the glass, frame, sliding-rod, and thumb-piece forming one part; the tongue-depressor and spring-groove making the other part. When putting it together one merely slips the rod where the thumb-piece is into the groove, slides it down, and the instrument is ready for use. Fixing the tongue-depressor on the patient's tongue, one keeps the thumb on the thumb-piece, and the other hand is free for atomizing, cauterizing, or for other purposes. In moving one's head up and down, or from side to side, one presses the thumb-piece with the thumb in the desired direction, thus regulating the position of the guard, while not disturbing at the same time the position of the depressor or interfering with the work to be done. There are no complicated parts and no screws; it can be easily put together or taken apart. As it can be boiled, it can be easily rendered aseptic. Messrs. Tiemann & Co., of New York, are the makers, and the instrument is constructed in the best possible way.



777 South Third Street.

MEDICAL PROGRESS.

Laryngeal Hemiplegia due to a Malignant Papilloma of the Brain.—Mackenzie (*Journal of Laryngology, Rhinology, and Otology*, vol. lx, No. 4, p. 259) has reported the case of a man, sixty years old, who presented shortness of breath, huskiness of voice, and slight occasional dysphagia. Five years previously he had suffered from transitory melancholia. Laryngoscopic examination disclosed complete respiratory and phonatory paralysis of the right vocal band, which lay in the cadaveric position, and was neither abducted nor adducted in the slightest degree during phonation or during respiration. Its tension was also defective. There was no intralaryngeal swelling, and an esophageal bougie passed without the slightest obstruction. There was dulness on percussion above and below the right clavicle, and posteriorly, on the same side, there was well-marked bulging in the supra-spinous region, with increased vocal resonance and bronchial breathing.

A provisional diagnosis was made of pressure upon the right recurrent laryngeal nerve, most probably where it comes into relation with the apex of the right lung, by some old pleuritic affection. Free and repeated counter-irritation over this region was recommended, and potassium iodid prescribed. Slight improvement followed, but later giddiness developed, speech acquired a nasal intonation, and swallowing was followed by nasal regurgitation of fluids. The walk became staggering. The knee-jerks and plantar reflexes were normal or exaggerated. The pupils reacted to light, the left, however, more freely than the right. There was diplopia, apparently due to paresis of the right superior rectus. The fundus of each eye presented no abnormality. The patient became incoherent, restless, and talkative, and finally semicomatose until death ensued.

Upon post-mortem examination firm adhesions were found binding the apex of the right lung to the anterior chest-wall, especially opposite the second rib. The lungs and pleura presented no other abnormality. Both vocal bands were in the cadaveric position, and the ventricles contained small collections of food-particles. Both vagi and recurrent laryngeal nerves were examined, and found normal and free from local pressure. No difference could be observed between the muscles on the two sides of the larynx. The liver was the seat of a number of simple angiomatous tumors of unusually large size. On the under surface of the cerebellum were three distinct tumors, slightly raised above the surface. The largest, about the size and shape of a hazelnut, with its long axis placed transversely, occupied a part of the flocculus and the biventral lobule on the right side. The smallest lay near by, about one-quarter of an inch behind and a little further externally, while the medium-sized one lay in the postero-inferior portion of the left side near its internal margin. In addition to these there were five or six other tumors varying in size, mostly situated close to the surface of the gray matter, but two, however, were quite imbedded in the white matter. On section these tumors all resembled one another. They had a yellowish-white center, with a well-defined reddish periphery, the smaller ones being entirely reddish. They were fairly firm and well-defined, in some cases reaching the surface; in others, having a thin layer of gray matter outside of them, or being entirely in the white matter. The first-mentioned and largest of the tumors might have exercised a varying degree of pressure upon the roots of the right vagus nerve, to which it was close, but the nerve was not flattened, and the nucleus, as well as the other basal nerves, appeared normal. No tumor was seen projecting above the surface of the cerebrum or was visible on external examination, but on section there were fifteen or sixteen tumors found scattered throughout its substance, the largest being about the size of a hazelnut. On section these exactly resembled those in the cerebellum. The surrounding brain-tissue presented the appearance of an ordinary encephalitis, mostly of a comparatively recent origin. No tumor-growths were found in any other organs or tissue in the body.

Strangulation of the Vermiform Appendix in an Infant Six Weeks Old.—Drew (*Lancet*, No. 3740, p. 1114) has reported the case of a male infant, six weeks old, that presented an inflamed, irreducible swelling, occupying the right groin and the right side of the scrotum. The latter had been enlarged from birth, but was reducible by manipulation. The swelling appearing unduly large, and the child being restless, the mother administered a dose of castor-oil, which acted freely. The child vomited, and the swelling became larger and harder, and the skin red. Hot fomentations being unattended with relief, an attempt was made to reduce the swelling under chloroform. Something was found to go back, but there was no sliding or gurgle, and the swelling was not visibly reduced in size. The child vomited once during the next day, and the bowels acted twice. The skin of the right side of the scrotum was red and edematous. The right inguinal canal and the right side of the scrotum were occupied by a hard and tender swelling, which was irreducible.

On operation the tissues were found to be thickened and inflamed. The tunica vaginalis contained a little fluid, and both it and the testicle were inflamed. The vermiform appendix occupied the funicular portion of the sac. It was red, and its middle third was considerably enlarged. A ligature was applied on the proximal side of the swelling. A circular incision was then made around the upper part of the appendix, only the serous and muscular coats being divided. These were then retracted from the central mucous tube, and the latter was tied with a fine silk ligature at the highest point exposed. The mucous membrane was then divided below the ligature, and the appendix was removed. The serous and muscular coats, being released, projected well beyond the ligature. They were inverted by three Lembert sutures, which were tied over the end of the stump. A second series of Lembert sutures were inserted, and as they were tied the central tube of mucous membrane was displaced upward into the sacrum. The stump of the vermiform appendix was reduced into the abdomen, the neck of the hernial sac was ligated and divided, and the operation was completed in the usual manner, the wound being entirely closed after the operation. The temperature rose to 101.6°, but fell to the normal on the following day, and so continued afterward. The wound healed by first intention, and the child was discharged on the eighteenth day.

The parts removed consisted of an inch-and-a-half of the vermiform appendix. At a distance of half an inch from its tip there was an oval, fluctuating swelling, measuring half an inch in length, and containing pus, which lay altogether external to the mucous membrane. The latter was thinned by ulceration opposite the abscess.

Ulceration of the Innominate Artery from a Halfpenny.—Atkins (*British Medical Journal*, No. 1792, p. 973) has reported the case of a child, three years old, that had swallowed a halfpenny, without coughing or choking. Feeding with porridge, etc., followed by castor-oil and free purging, was during the next three days unattended with additional symptoms. Some six weeks later the child again presented itself with ulcerative stomatitis of not severe degree, although a few ulcers on the tongue were rather deep. There was no line on the gums. The temperature rose to 101°. Potassium chlorate and borax were employed topically. There was some objection to taking solid food, which caused coughing, hawking, etc. The ulcers were nearly healed, and the child seemed doing well, when it suddenly ejected two ounces of bright blood in clots. He was seen to be much collapsed and blanched out of proportion to the visible hemorrhage. Under treatment he rallied somewhat, and was able to swallow the liquid allowed in small quantities. A little later he ejected four ounces of blood, and died in a few minutes. Upon post-mortem examination the stomach was found distended with about three-quarters of a pint of blood-clot, but it was otherwise normal. There was also much blood in the upper intestine. A catheter introduced into the esophagus from below passed into a cavity about the size of a walnut, just below the level of the right sterno-clavicular articulation, as seen after dissecting off the trachea and removing the lungs. In this cavity, which was entirely on the right side of the esophagus, was a blackened halfpenny. When the firmly contracted heart was opened, a probe, passed along the aorta and into the innominate artery, protruded into the same cavity, at about the bifurcation of the vessel. This was very fetid, but no suppuration was evident; only broken-down blood-clot.

Syncopal Bradycardia.—At a recent meeting of the Harveian Society of London, Morrison (*Lancet*, No. 3740, p. 1119) made the following classification of bradycardia: 1. Endocardial bradycardia, in which the chief factor is increased endocardiac blood-pressure. 2. Myocardial bradycardia, due to fatty or fibroid degeneration of the myocardium, or to changes assumed to exist in the intrinsic neural mechanism of the heart. 3. Exocardial bradycardia, or that due (*a*) to reflex and transient nerve-irritation, especially in the pneumogastric territory; (*b*) to poisons, such as digitalis, opium, and chloroform; (*c*) to constitutional and extracardiac diseases, such as rheumatism, syphilis, and meningitis. 4. Compound bradycardia, or that due to various factors. 5. Doubtful cases, in which well-marked clinical bradycardia could not be ascertained after death to have rested upon a discoverable cause. It was shown that bradycardia could not be associated exclusively with most anatomic changes, either in the heart or neighboring organs, because these were much more frequently attended with cardiac acceleration. A preponderant *rôle* was ascribed to the influence of the cardiac nervous system. Special emphasis was laid on the fact that cardiac accelerants had little appreciable effect upon the heart in persistent bradycardia. These include belladonna, trinitrin, and alcohol, as well as such movements, locomotor or pyrexial, as under normal circumstances quicken the heart.

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SATURDAY, JUNE 8, 1895.

IS THE BRAIN AN APPENDAGE OF THE ALIMENTARY CANAL?

THERE is nothing more humbling to our pride than the study of pedigrees. How many of the heroic ancestors of our Sons of the Revolution are found on investigation to have been runaway chore-boys or sutlers' assistants? Even St. George, of merrie England, himself, is said to have been martyred (by request) on account of the bad bacon he supplied on a Government contract, and our physiologic aristocracy fares no better under the pitiless researches of science. If there is any organ in the body which has had the legend characters "F. F. V." inscribed upon it in large letters by universal consent, it is the lordly brain. Is it not the seat of the intellect, the organ of thought, the home of the soul? We even speak of it with bated breath as of a denizen of another sphere, which has done our gross body too much honor by condescending to take up its abode with and be supported by it. Does not the brain make the man, as all our systems of education recognize and completely ignore the dull body accordingly?

The first blow to this canonization was given when it was discovered to be part of the body, composed of precisely the same chemic and biologic elements as the rest of the tissues, and subject to the same laws of growth and decay. Then it was proved to be absolutely dependent upon them for its nutritive existence. It was next found to be merely an organ, and not even an essentially vital one at that, as its entire mass could be removed in the lower animals and large portions of it in human beings, and yet life be maintained. In short, it is merely a sort of representative headquarters, a congress, a telephone-exchange, created by the citizen-cells of the body-republic, for expediting their commercial transactions and facilitating communication.

What class of voters appears to be most largely represented in this assembly? Apparently this honor belongs to the great boroughs of the muscle-cells. Indeed, *all* that we absolutely definitely know of the functions of the central brain-mass is that large tracts of the choicest portions of its surface appear to be solely concerned with transacting the commerce of these great inland guilds with the sea-board and with one another. The five great exploring, news-gathering, and signal-service classes have also laid out and improved large areas of the cortex as their stock-exchanges; but as for the judgment, the memory, the reason, the imagination, they seem to be merely tenants-at-large, with no more local ownership-rights than the Jews of the middle ages. To say that the brain is the organ of the muscles and the five senses is humiliating enough, but worse is to follow.

It has long been known by biologists that the earliest central aggregation of nerve-matter to be found is in the form of a ring or collar around the esophagus, in crustacea, in squids, and even in some worms. This consists of four ganglia, connected by nerve-cords, of which the lower or ventral pair are larger than the upper or dorsal pair. These ganglia are accordingly known as the sub-esophageal and the supra-esophageal. When, however, we come to the vertebrate type we find at once, even in the lowest forms (amphioxus, ascidians), that the sub-esophageal ganglia have disappeared completely, and all the neural mass is apparently above (dorsad) the esophagus, and no trace of the "collar" to be found. So radical is the change that for a long time the vertebrate nervous system was regarded as of entirely different origin from the invertebrate. To the morphologist, however, this seemed irrational, incredible, and the question was soon raised, Did the alimentary canal always terminate at its present cephalic extremity, the vault of the pharynx?

An examination of this region in the adult human head quickly reveals a most suggestive state of affairs. In the roof of the pharynx we find that singular group of lymphoid tissue, Luschka's tonsil, surrounding a pouch-like opening extending directly upward, the so-called pharyngeal bursa. Directly above this, in the floor of the cranium, is situated a deep socket-like depression in the basisphenoid, the pituitary fossa, occupied by the "gland" of the same name, better known as the *hypophysis cerebri*. The lower half of this body is composed of glandular epithelium like that of the pharyngeal vault, while the upper half is of nervous tissue. The inference is plain, and when we further find that in childhood the infundibulum, or stalk of the pituitary body, is hollow, and thus connects it directly with the cavity of the third ventricle, while a fibrous cord runs from the lower surface through the body of the sphenoid to the pharyngeal bursa, and that in embryonic life the open pouch upward from the pharynx is in direct contact with the open pouch downward from the neural canal, we are almost driven to the conclusion that we have here the remains of an ancient connection between the neural and enteric canals.

This is far from being as preposterous as it seems, for it has actually been demonstrated to exist at the opposite or caudal extremities of the tubes in many vertebrate and even human embryos, the points of former juncture at this end being Luschka's coccygeal body on one side and the appendix vermiformis on the other, which latter disused passage has been vindicating its former importance and present possibilities for mischief in a most sinister manner of late. In this light appendicitis is merely another striking illustration of the peculiar liability of atrophying rudiments, especially of former openings, to become the seat of disease.

In fact, the later view of the origin of the pituitary body, originally suggested by the great Owen, and recently verified by Gaskell and Sutton, is that it is the remains of the primitive esophagus, of which the third ventricle is also a part, and which extended upward *via* the pineal gland and its (hollow) peduncles to a mouth situated somewhere in the cranial vault. The present mouth and fauces are a secondary invagination of the buccal derma (as they obviously are histologically and embryologically) between those two pairs of primitive "legs," or gill-arches, the upper and lower jaws. But, says some one at once, what about the pineal eye? Two answers might be given, both conclusive. The first is that the "eye"-theory of the pineal gland is purely conjectural, as it is nowhere found in a functional state, and careful examinations of the structure in its most highly developed form in certain lizards (*Hatteria*, etc.) reveal merely a cup-shaped sac filled with epithelial *débris* and pigment, connected with the third ventricle by a hollow stalk. It is really doubtful whether it ever was an eye at all. Any epithelium-lined cavity might have degenerated into similar *débris*. The second answer is that, supposing the organ to have developed visual functions at some time, this might easily have been a *secondary* modification of a disused alimentary opening. Of course, any view of the genesis of this pineo-pituitary tract must, from the nature of the case, be mainly theoretic. The use of a theory is to explain facts. Let us apply this test to our present one.

In the first place, the theory offered restores the unity of plan between the vertebrate and the invertebrate brain, the cerebral masses being grouped *around* the alimentary canal in both. The cerebral hemispheres are one pair of esophageal ganglia, the corpora quadrigemina the other, and the crura cerebi the linking "collar." Thus the most "intellectual" part of our brain is the most "abdominal." This is hard on the cerebrum, but it has had so much flattery that it must take its turn with the rest of us.

Secondly, this theory ranks the whole of the face and sense-organs as ventral appendages, developing into gill-arches, and finally fusing together more or less completely. For instance, we might regard the supra-orbital ridges and nasal bones as one pair; the eyes with their muscles (endopodite) and orbito-malar arches (exopodite) as another pair of appendages (as to this day they are in the cray-fish); the superior maxillæ another pair; and the lower jaw (mandible) a fourth, the teeth having originally been at the symphysis and the jaws opening laterally, as they do in the "foot-jaws" of the lobster. The nasal, otic, and oral cavities are thus gill-clefts, and the origin of congenital cysts at the angles of the orbits and in a line with the angles of the mouth, as well as opposite the ends of the lower gill-clefts in the neck, is beautifully explained.

The arterial circle of Willis around the pituitary fossa may, perhaps, be regarded as the remains of a primitive vascular ring with one dorsal (basilar) and two ventral (carotid) aortas, as in invertebrates, while the same may be said of the singular "circular sinus," with its (now disconnected) single dorsal (longitudinal) and double ventral (cavernous) sinuses.

Furthermore, the presence of calcareous and siliceous matter ("brain-sand"), which is utterly unintelligible on the supposition that the pineal body was originally an eye, explains itself at once if the organ was a mouth-part with horny or enamel-like epithelial formations.

But the most interesting and practical aspect of this theory is the light it casts upon the nature of that mysterious organ, the pituitary body. This has been attracting a good deal of attention of late, after the familiar manner of most vestigia, by being concerned in a serious disturbance of general nutrition, akromegaly. The most constant pathologic change in this interesting condition is a marked hypertrophy of this body, followed later, in some cases, by atrophy. A similar enlargement has also been reported by recent observers (Tartufi, Dana, Hutchinson) in cases of giantism, and a number of cases have been recorded in which the subjects of akromegaly were decidedly above the average height and weight. Hence it has been suggested that a considerable proportion of cases of giantism are simply akromegaly occurring in early life, when the abnormal growth could take place comparatively symmetrically. This supposition is strengthened by the well-known fact that giants are usually weak, overgrown, slow-witted, short-lived individuals—abnormal, in fact.

The theory is further supported by the fact that in giants far the larger part of the overgrowth takes place in the extremities (arms and limbs), to the terminal segments of which it is mainly confined in akromegaly, while the same is true in dwarfs, most of the shortening being found in the bones of the limbs. Is it not most suggestive that the organ whose hypertrophy almost invariably accompanies these changes is at the very juncture of the neural and enteric canals? Half-brain, half-stomach, and thus capable of sympathetically controlling the entire organism, and that the changes which result occur almost entirely in the alimentary (ventral) appendages, the frontal sinuses, nose, jaws, arms, limbs?

It is hardly necessary to suggest to clinicians in this light the remarkably intimate sympathy that still exists between the alimentary tract and the brain. It has given its name to one of our commonest forms of mental derangement, melancholia, "black bile." The delusional insanity dependent upon an impacted colon, the nightmare that avenges the overloaded stomach, the peevish pessimism and doctrinal bigotry of the dyspeptic, the torturing hallucinations of starvation, and the "mirage" of thirst are familiar to us all.

Even our theologic brethren have long known how to produce visions, ecstasies, and "revelations" by the simple means of prolonged and frequent fastings.

However little it may flatter our pride of intellect, the most terse and comprehensive definition of man is "a stomach and its appendages," and the brain must take its place with the rest.

MYDRIASIS AS A DIAGNOSTIC AND THERAPEUTIC MEASURE IN GENERAL DISEASE.

THERE still remain here and there a few recalcitrant minds impervious to logic and evidence, who hold that ocular malfunction is never a source of extra-ocular disease. For such impenetrables, of course, no one writes, and they may therefore be warned that the present writing does not concern them. There are, however, other physicians who are in doubt about the matter, or who have never had it brought home to them, and who are willing to test it when occasion presents. There is still a third class, composed of those who believe more or less, but who are undecided exactly as to what extent the fact obtains, or just what extraocular affections are the result of ocular abnormalism. To these two latter classes we have two suggestions to make.

The first is to use mydriasis as a means of differential diagnosis in certain classes of cases of functional nervous disease that are obstinate to treatment or in which the etiology of an affection that may be due to a reflex neurosis is obscure. There is an overwhelming mass of evidence to be found in medical literature leading to the conclusion that ametropia and muscular-imbalance may be the unsuspected cause of headache, sick-headache, functional gastric and digestive derangement, anemia, anorexia, chorea, convulsive tic, hysteria, and other nervous disorders. The general physician is sometimes puzzled to know how he may in a certain case prove or disprove the theory of a possible ocular reflex. If he is able to induce the patient to visit the ophthalmic specialist, he may be left still deeper in doubt by the fact that, however grand the reputation of the specialist, his patient may fall into the hands of a faddist, or of one who refracts by machinery, or of one who disbelieves in ocular reflexes—in a word, of one who has neither the desire nor the ability to do his work with that degree of refinement, judgment, and precision upon which all success in this department depends. It might as well be confessed that the stock expression, "The patient obtained no relief from ocular treatment," has absolutely no meaning, without the clearest discrimination as to what kind of an oculist the patient consulted.

In all such cases the perplexed general physician has in mydriasis a means of differential diagnosis of often-decisive and of almost-always significant service. Homatropin (ten grains to the ounce) instilled three times a day, or atropin, if more prolonged mydriasis is not objectionable (four grains to the ounce) in ordinary cases of those under fifty years of age, may be recommended for the purpose. It is the most common observation of patients, spontaneously offered the oculist, that during mydriasis their headaches, for example, disappeared and that they felt, generally, "so much better."

If, therefore, the general physician, by following the suggestion, finds that there is relief of distant symptoms resulting from a few days' mydriasis, it is a pretty convincing indication that at least the immediately inciting cause lies in eye-strain. In such cases, if the visit to the oculist brings no lasting relief, one may legitimately suspect that gentleman's treatment is at fault, and in the fact itself one may find a valuable "check" upon or proof of his ability.

But apart from the value of mydriasis as a means of arriving at a differential diagnosis, there are many conditions in which it may be of use to the neurologist and the general physician as a therapeutic and prophylactic agent *per se*.

1. In prolonged illness, patients from their confinement and inactivity are prone to read or sew too much, and the nervous system is unconsciously irritated or wearied, either from an uncorrected ametropia, etc., or from simple over-use of the eyes and the attention, or from the wearisome use of the eyes while lying or in reclining positions. In these ways it cannot be doubted that convalescence has frequently been lengthened and the weakened organism put to harmful effort. Slight mydriasis would effectively prevent all this, and without any possible injury in other directions.

2. Proceeding upon the assumption that eye-strain may sometimes cause extraocular malfunction, and also assuming that such eye-strain may possibly exist in uncorrected or incorrectly corrected eyes, the general physician may find it of advantage to use mydriasis as an *ad interim* measure of possible relief, the accurate ophthalmologic examination to be secured later. Errors of refraction and muscle-strengths change with almost all decided changes in the general health, and it is often necessary or better to defer local eye-treatment with spectacles, etc., until health has been fairly well established.

3. Mydriasis may also be therapeutically helpful as an adjunct to other treatment. Eye-strain, of course, may be a secondary cause of distant symptoms, or one of several other causes of them. In many cases setting the accommodation at rest may prove one useful aid to other and more important general measures, either as a little means of lessening general cerebral irritation, or specifically in reducing the amount of the derouted reflex to a single organ. A most acute and scientific observer, DR. CHARLES G. STOCKTON, as a result of long experience, has concluded that severe eye-strain (and usually of a definite variety—unsymmetric astigmatism) is a frequent cause of a distinct and distressing gastric malady. (THE MEDICAL NEWS, Dec. 15, 1894, p. 655.) Now it is the veriest *a b c* of medical wisdom that a long-continued disease, even if only "functional," is not by any means always cured immediately, and as if by magic, with the stopping of the immediately inciting cause. Moreover, it is not an easy matter to secure an absolutely accurate correction of unsymmetric astigmatism in these forlorn days of tenotomomania and machinery. Besides all this, it is often doubtful if re-refraction is not required, whilst still another disturbing thought arises that even with perfect glasses hypersensitive and long-weakened eyes may still for a time remain sources of reflexes to similarly weakened organs elsewhere. Under all these puzzling circumstances is it not a promising way of escape to keep the eyes under somewhat prolonged mydriasis as an adjuvant to other treatment?

4. In cases of headache, sick-headache, and in all functional and nervous affections, wherein there is a more or less definite periodicity of recurrence, mydriasis may be of service in aborting an on-coming attack. It is readily seen that the instillations of the mydriatic should in such cases begin sufficiently early to lessen long enough the derouted

reflex, and thus to give the surcharged centers time to normalize themselves.

To the alert-minded physician the foregoing hints may stimulate other applications of the principle according to the ever-varying circumstances and conditions of his patients; but sufficient has been stated to make it appear possible that in mydriasis we have a hitherto unsuspected agent, possibly useful both in the diagnosis and in the treatment of many types of functional disease.

EDITORIAL COMMENTS.

Cents and Sentimentalism.—Hospital-reports with their prominent lists of medical officers, acknowledgments of gifts, etc., frequently furnish absorbingly interesting and amusing reading. We quote below a few passages from one illustrated, illustrative, and illustrious example that has lately come to our notice. Instead of a "Report" of what had been done, it is plain that the eye of the writer had in view a condition of affairs not yet existing, but most mightily desired. Charitable institutions have been known to use the money donated for charitable purposes to pay attorneys and lobbies for "junketing" expenses and to get further bequests and gifts. The ethics of such a plan is very questionable—to put it mildly. One wonders to what extremes such practices might finally lead, and if all the gifts might not possibly be used in this manner. And so one cannot help asking as to the ethics of using the gifts of the charitable in making gushing, lachrymose, and perfervid appeals in much-illustrated[1] "reports," the object being to elicit tears and dollars from the susceptible. If such ethics is not questionable, we incline to think the esthetics is very much so—in fact that it is nauseatingly bad. For example:

> "More than *thirty-thousand* different patients have been treated in the department for the Diseases of the Ear since the hospital was opened; and thrice thirty thousand blessings have been asked upon those who made it possible to give relief to such as ask, but have no money to pay for relief."
>
> "Give according to your means and learn the luxury of doing good. Estimate, if you can, the number of lives saved, the amount of suffering relieved, the years of happiness and usefulness secured by the work which has been done by this hospital. Compute in dollars the value of time and labor given to the world by patients restored to health, and compare it with the cost of this institution. Will regrets grow out of gifts to such a charity? Legacies left to the Manhattan Eye and Ear Hospital are investments that shall forever yield large returns of health to the sick, sight to the blind, hearing to the deaf, and blessings to the memory of generous benefactors. The channel of communication between the generous giver and the grateful receiver is direct—through organized charities like the Manhattan Eye and Ear Hospital."
>
> "Let thine alms go before, and keep Heaven's gate
> Open for thee, or both may come too late."
>
> "Our hearts are touched to see the tender care these woful babes receive from gentle hands and sympathetic souls of nurse and doctor."
>
> "How vigorously the great heart full of charity leaps to the rescue of mute helplessness. How powerful the appeal of silent suffering—*that can be relieved.* Sympathy is the strong bond that binds together God's universe; it is the sweet influence that cements kindred souls, it is the soul of charity."
>
> "And charity shall never fail,
> Her anchor holds within the vail."

My dearly beloved breddren, de cause ob religion am de cause ob dis church, and de success ob dis church depends upon de passon's salary. De elders will now pass de contribution-boxes.

* * *

"Athletics," and Honor and Learning.—That foot-ball is the indispensable condition of a high sense of honor and of a high standard of learning we have long been told and dare not henceforward doubt. In proof of this remarkable development of honor Yale has demanded of Harvard an acknowledgment of repentance for some rumor of hasty language, which, of course, Harvard's equally sensitive self-respect will not permit her to make. Hence the usual foot-ball matches during the next season between the punctilious youths of these two colleges will not probably take place—and the world sighs in vain to think of the degradation of character, the sad clouding of the sense of honor, and the lowered ambition of scholarship that will certainly follow from even a single year's omission of the honor-inspiring game. It may also be noted that of forty-five men elected to the senior-year secret societies of Yale only fifteen men were chosen solely on account of their records as athletes. The harsh criticism aroused by this indication of very moderate opinion seems to us strange. The absolute prerequisite of scholarship, honor, and success in life, we have been authoritatively told by our collegiate teachers, professors, and presidents, being foot-ball ability and foot-ball success, we do not understand why a less number of athletes, say 44 out of 45, should have been chosen for secret-society honors. This would leave a place, a generous allowance, surely, for one man of exceptional but purely literary ability, and for this place the young Yalesian, Chauncey A. Wells, might be selected because of the high literary ability he has displayed. We are puzzled to learn, however, that while fifteen athletes have been chosen as honormen by their fellows, young Wells has been refused the honor. *Magna est foot-ball et prævalebit.*

* * *

The Physicians and the Treatment of the Late Mr. Gresham.—It appears that the late Secretary of State of the United States was, during a part of his recent fatal illness, under the care of an irregular practitioner, who, when subsequently replaced by a regular physician, made complaint of a "stealing" of his patient. Further, we hear that the distinguished patient did not receive proper treatment, etc., etc. With the choice of a physician by a family outsiders can take no issue, but any criticism of the line of treatment pursued in a given case is quite gratuitous, not to say impertinent. Human judgment may err, but such error is less likely on the part of those in attendance than on the part of those who render opinions on insufficient and perhaps distorted evidence. The results of the late war did not depend upon those who did their fighting at long range—at home—but upon those who went to the front and rendered actual service.

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[1] The illustrations in this instance are not exactly ultra-scientific in character, as witness the legends beneath them: "A few of the hundreds in waiting for help;" "The young and the old appeal to us for help;" "The children must be saved from blindness;" "The purulent ward" (we regret in these antiseptic days that one ward is itself actually purulent); "What must be done for the little ones?" "You will regain your hearing," etc., etc.

The Meetings of the Association of American Physicians at Washington.—For a number of years the annual meeting of the Association of American Physicians has fallen on Memorial Day—a legal holiday. There would be no objection to this if the meetings were not held in the Library of the Army Medical Museum, and this necessitated the attendance—and for an increased number of hours beyond the usual—of a number of *attachés* who would otherwise be disengaged, as those in other departments of the public service are. This year, by some misunderstanding, the Library was kept open also on May 29th in readiness for the assemblage of the Association, while all other departments were closed on account of the funeral of the late Secretary of State, Mr. Gresham. Thus the Library *attachés* have this year lost two holidays to which they were entitled. We recite these facts with the assurance that if they reach the attention of the proper authorities future meetings will be so arranged that the deprivation referred to will not be repeated.

SOCIETY PROCEEDINGS.

ASSOCIATION OF AMERICAN PHYSICIANS.

Tenth Annual Meeting, Held in the Army Medical Museum and Library, Washington, D. C., May 30 and 31, 1895.

FIRST DAY—MAY 30TH.

DR. WILLIAM OSLER, of Baltimore, delivered the

PRESIDENT'S ADDRESS.

He asked, how far has the Association fulfilled the object it had in view; in how far have its original hopes and aspirations been realized? The primary object of the society has been the advancement of scientific and practical medicine, to the exclusion of medical politics and medical ethics; with no care as to who are the officers and who are not, and no question as to what part of the country a man comes from, but whether he has done good work, and will do more, and whether he has anything to say worth hearing, and can say it. The nine volumes of the *Transactions* are a full and satisfactory answer to the first question. They contain the most noteworthy contributions to scientific and practical medicine that have been made in this country during the past ten years. In them have been discussed the problems of the day. In some notable instances the subjects have been introduced through them. Especial reference was made to the papers of Fitz, on Appendicitis, and Draper, on Pancreatic Hemorrhage. Typhoid fever has rarely been missed from the deliberations, which have done much to advance sound views on etiology and treatment. The parasite of malaria has been fully discussed. The many important questions relating to tuberculosis have received a large share of attention. Studies on the diagnosis of diseases of the stomach and of the pancreas, on dysentery, on infarction, and other affections of the bowels, have greatly enlarged our conception of these disorders. Of practical interest is the large group of papers on subjects relating to heart-diseases, to arterial sclerosis, to the mutual relations of renal, arterial, and cardiac changes. The problems of anemia and chlorosis have often been before the Association, almost always with profit, notably so in the case of the paper on Thrombosis in Chlorosis, which remains to-day the best on the subject which has appeared in any language. Myxedema, with the brilliant results that follow the use of thyroid extract, has been presented with unusual fulness. Among other subjects that have been judiciously and thoroughly discussed may be mentioned the results of the removal of the ovaries and tubes, subphrenic abscess, akromegaly, and lead-poisoning. Medical politics and medical ethics have received no attention, and, with the exception of the Secretary, little care has been given to the selection of officers. In the selection of members, however, the question has been asked concerning applicants, Have they done good work? Rarely anything else; never, whence they came.

The Association has already had a potent influence for good on the study of pathology and clinical medicine in this country. What is needed is a larger group of men to devote themselves exclusively to these branches. The rapid progress of the medical schools has increased the teaching positions in the scientific branches, and there is at present an actual scarcity of thoroughly trained pathologists and bacteriologists to fill them. There is no need to insist on the necessity of accurate and prolonged teaching in the development of workers in these branches; but the profession in this country seems not as yet to understand the art of training special clinical physicians. It has been too much taken for granted that these develop readily in the routine of family practice. True, along this path some of the most noted medical men have travelled, but the time has come when able young men should be encouraged to devote themselves to internal medicine as a specialty—content to labor and to wait during the first ten or fifteen years of professional life, with pathology as the solid basis of development. Such men will pass to the wards through the laboratories, thoroughly equipped to study the many problems of clinical medicine. They will gain the confidence of their professional brethren by accurate and thorough work, and through them, if they wish, the public and practice. The opportunity for such a career is in every city with a hospital of fifty beds. Of such, of physicians in contradistinction to surgeons, gynecologists, and general practitioners, and of pathologists and bacteriologists, should the Association of American Physicians in large part be composed. In connection with the proposition to increase the membership of the Association to 125, it is to be remembered that the society is a working body, and when a member ceases to attend regularly, or when his interest grows lukewarm, he will best promote the common welfare by quietly retiring. During the period of its existence the Association has lost by death 16 of a total of 111 members. In the past year two members have died, Dr. Alfred Lee Loomis and Dr. William Cecil Dabney.

An amendment to the Constitution proposing an increase in the membership to 125 was defeated.

Dr. B. K. Rachford, of Cincinnati, read a paper entitled

LEUKOMAIN-POISONING,

which he defined as a form of auto-intoxication, dependent upon defective metabolism and appearing in three principal varieties: migraine, migrainous epilepsy, and migrainous gastric neurosis. Of the poisons of the uric-acid group the most potent is paraxanthin. Of less toxicity is xanthin. Both of these are capable of inducing profound nervous symptoms. They are soluble in urine, water, and blood. Paraxanthin is isolable from the urine only with great difficulty and when present in large quantity. For practical purposes it has been found that if detectable in less than four liters of urine the quantity may be considered abnormal. Both paraxanthin and xanthin are not formed in the kidneys, but exist preformed in the blood.

Migraine is perhaps the most common form of leukomain-poisoning. In this condition the urine will be found to be of dark-red color, free from albumin, with diminution in the amount of urea and increase in that of uric acid. During the paroxysm paraxanthin and xanthin will also be found, while these are absent in the intervals.

Migrainous epilepsy is also a manifestation of leukomain-poisoning, differing, however, from true epilepsy in the absence of mental impairment. Injected into lower animals paraxanthin and xanthin give rise to general nervousness, extreme reflex excitability, tetanic stiffness, followed by relaxation, dypsnea, gasping respiration, and stimulation of the heart. Having observed that these symptoms could be counteracted by the administration of potassium permanganate, it was concluded to employ this drug in a case of migrainous epilepsy, and one grain was given three times a day. The patient was free from attacks for ninety-four days, when an attack occurred, and this was followed by a second attack two weeks later; thereafter there was none for three months.

Migrainous gastric neuroses may develop at any period between childhood and adult life. The attack may be preceded for a day by general discomfort, scanty, high-colored urine, and flushing of the cheek. The attack breaks out with great fury, and is attended with pain in the epigastrium, vomiting of glairy mucus, eructation, occurring in paroxysms until relieved by injections of morphin. The attack is not self-limited, but persists until relieved by medicinal or other measures. Here too, during the paroxysms, the urine contains paraxanthin and xanthin in appreciable quantities, while the uric acid is increased and the urea is diminished. In one of the cases of this kind xanthin was found also in the gastric contents.

Dr. F. P. Kinnicutt, of New York, asked if similar examinations had been made in cases of tetany, some of which are certainly due to auto-intoxication. One often observes dilatation of the stomach, together with severe gastro-intestinal disturbance. Of two cases seen by Dr. Kinnicutt, one was fatal within twenty-four hours of the onset of the attack, and on post-mortem examination only dilatation of the stomach was found. There had been several previous attacks, and the symptoms were typical and associated with evidences of profound gastro-intestinal disturbance. The second case occurred in a child and the spasm was continuous. In this also gastro-intestinal symptoms were prominent and relief was afforded by lavage, together with other appropriate treatment.

Dr. W. H. Thompson, of New York, dwelt upon the intermittent character of the functional neuroses in general, contending that any nervous disease may be attended with complete intermissions. This occurrence points to a toxic rather than to a structural origin, against which the fact of hereditary transmission does not militate, for, as in gout, there may be such transmission of an abnormal chemistry as well as of an abnormal morphology. The treatment of migraine may satisfactorily be prophylactic. Ammonium or sodium benzoate may be freely used to this end. The treatment of epilepsy may be based on similar principles. In the cases of this group a cumulative tendency is to be observed and the treatment should be governed accordingly. A case illustrating the hereditary association was related. A mother suffered with migraine, her son with uric-acid gravel, a daughter also with migraine, and her son with epilepsy.

Dr. Rachford added, in conclusion, that he had already requested permission of the Cincinnati Academy of Medicine to examine the urine in cases of tetany, but had not been afforded the opportunity.

A paper by Drs. Victor C. Vaughan and George D. Perkins, of Ann Arbor, entitled

SOME TOXICOGENIC GERMS FOUND IN POISONOUS FOODS,

was read by title.

Dr. A. C. Abbott, of Philadelphia, read a paper entitled

THE EFFECTS OF THE GASEOUS PRODUCTS OF DECOMPOSITION UPON THE HEALTH, AND RESISTANCE TO INFECTION OF CERTAIN ANIMALS THAT ARE FORCED TO RESPIRE THEM,

in which were detailed a series of experiments in the course of which animals, rats, and guinea-pigs, were confined under bell-glasses through which was passed continuously, for varying periods, the air from over substances (meat-infusion, sewerage, and urine) in different stages of decay. Some of the animals were subjected to this treatment only, while others were inoculated from time to time during the experiment with cultures of the bacillus of typhoid fever. Of eighteen animals on which the experiments were performed, only two showed any effect; the remaining sixteen presenting nothing that could be attributed to the conditions under which they had lived for from one to five months prior to being killed. The general condition of these animals during these experiments, as determined by their outward appearance, appetite, and daily fluctuations in weight, was as good as that of other animals kept under the ordinary conditions of the laboratory.

In the light of these experiments it is concluded that there is but one of two positions to take with regard to the effect of the volatile products of decomposition upon the health and resistance to infection of individuals who respire them: either they play no part in producing diseased conditions, or in inducing susceptibility to infection, or the indications obtained by any such laboratory-methods of experimentation as have here been employed are unreliable and not susceptible of general application. The former alternative is to be accepted as far as man is concerned. The conditions under which he may find himself never reach such extremes as those employed in the experiments detailed, and it would seem hardly possible for man to exist under such circumstances. But that he does at times live and perform healthy functions under environments that to most persons would prove highly offensive is an every-day observation among workers in soap-factories, glue-factories, poudret-establishments, and the like, where the air breathed constantly reeks with the gaseous emanations from putrefying substances. In so far as the sewer-gas question is concerned, it is therefore difficult to conceive that the gaseous emanations from sewers and cesspools can play a part in the induction of disease when so highly diluted as they are in the air ordinarily respired by individuals into whose habitations such gases may be leaking.

DR. G. BAUMGARTEN, of St. Louis, read a paper entitled

RENAL AFFECTIONS FOLLOWING INFLUENZA.

He reported nine cases showing that renal lesions are not infrequent, though serious, sequelæ of influenza. Besides transient albuminuria he has observed acute degeneration of the kidney, acute inflammation, both forms of chronic diffuse nephritis, acute hemorrhagic nephritis, and persistent albuminuria not belonging to any of these groups. The number of applicants rejected for life-insurance has perceptibly increased since the advent of influenza in epidemic prevalence. It is thus clear that the injurious influence of the disease extends far beyond the attack.

DR. A. JACOBI, of New York, agreed to the frequency of renal congestion and inflammation in the course of influenza, and has found the diagnosis greatly facilitated by the use of the centrifuge. These conditions appear at the same time as those that occur in the course of diphtheria and typhoid fever, and are in each instance probably due to the toxins of the respective diseases. Microscopically the urine under these circumstances contains a small amount of blood, with hyaline casts strewn with granular matter and epithelial cells, and also granular casts of the thin variety. In the nephritis of scarlatina, on the contrary, the casts are of the wider variety. In the majority of cases recovery ensues in from two or three weeks to two or three months. Some, however, pursue a chronic course.

DR. JAMES TYSON, of Philadelphia, referred to a considerable number of cases in which the patients have been free from renal abnormality until after an attack of influenza. In other cases a harmless, functional, normal albuminuria was present previous to an attack of influenza, but subsequently more serious conditions suggestive of a toxic nephritis.

DR. F. C. SHATTUCK, of Boston, cited the case of a young lady who had been neurasthenic and was attacked with influenza, complicated by broncho-pneumonia and acute nephritis, resulting in almost complete suppression of urine and the development of uremic symptoms. The urine contained much albumin, and a fatal issue was feared. Later the quantity of urine increased and the patient appeared to be doing well, when symptoms of general neuritis developed and sudden death ensued. In other cases terminating fatally the large, smooth red kidney has been found.

DR. M. H. FUSSELL, of Philadelphia, cited two cases of parenchymatous nephritis developing in the course of influenza.

DR. A. H. SMITH, of New York, noted that the degree of intoxication from influenza appeared greater than the ordinary clinical symptoms would lead one to suppose. He also referred to subnormal temperature in cases of influenza, and ascribed this peculiarity to a profound invasion of the nervous system by a malignant poison.

DR. BAUMGARTEN, in conclusion, dwelt upon the varieties of renal change observed in the sequence of influenza. Some of these occur during the attack, some subsequently; some are attended with dropsy, some with uremic symptoms; some are chronic, without a distinguishable acute stage.

For himself and DR. WALKER REED, U. S. A., Surgeon-General GEORGE M. STERNBERG, U. S. A., referred to some experimental work begun by himself to determine if the serum of a vaccinated calf, immune to variola, were capable of neutralizing the potency of vaccine-virus, but attended with negative results. The investigation was taken up and continued by Dr. Reed, who succeeded in rendering monkeys resistant to vaccination by using serum from an immune calf in the proportion of 1 part to 100 of body-weight. This immunity was found to last for at least thirty days, and may be assumed to continue as long as sufficient antitoxin remains in the blood. This mode of conferring protection upon human beings can only become available by increasing the concentration of the antitoxin either by means of a virus of progressively increasing energy or by precipitation.

A paper by DRS. WILLIAM PEPPER and ALFRED STENGEL, of Philadelphia, entitled

A CONTRIBUTION TO THE STUDY OF THORACIC TUMORS,

was read by title.

DR. JAMES T. WHITAKER, of Cincinnati, read a paper entitled

ETIOLOGY OF IDIOPATHIC HYPERTROPHY OF THE HEART.

While it was contended that the conception of a true idiopathic hypertrophy of the heart is false, it was admitted that the designation was so firmly established in medical nomenclature as not to be easily gotten rid of. When the ordinary well-recognized causative influences are not present it is probable that there exists some kind of peripheral resistance. Among the causes of cardiac hypertrophy we have valvular disease of the heart; arterio-sclerosis; affections of the heart-muscle from infection, degeneration, etc.; affections of the nervous system. Such hypertrophy also develops in old age, as a result of hard work; from plethora, in the course of pregnancy; and from the abuse of alcohol. It occurs further in conjunction with nephritis, diseases and deformities of the chest, emphysema, kyphosis; with myocarditis, syphilis, gout, and diabetes; from irritation of the vagus, abuse of tobacco, venereal excess, etc.

DR. J. P. C. GRIFFITH, of Philadelphia, read a paper on

THE PROPAGATION OF MITRAL DIASTOLIC MURMURS.

He explained that he included in the diastolic period all murmurs occurring from the closure of the semilunar valves to the occurrence of the systolic impulse. These, though usually confined to the apex, are not invariably, and are sometimes propagated quite extensively, as, for instance, upward to the left, into the axilla and to the back. Seven cases were related, in which a mitral diastolic murmur was widely transmitted: in one, two-and-one-half inches behind the posterior axillary line; four to the posterior axillary line; and two to mid-axilla. All were heard high up in the axilla.

Dr. James Tyson, of Philadelphia, said that he had had the opportunity of making an auscultatory examination in one of Dr. Griffith's cases, in which the murmur was audible high up in the axilla and in the back. He presented a specimen illustrating the enormus dilatation which the left auricle is capable of undergoing in association with mitral stenosis. It came from a woman of twenty-eight, who had presented symptoms of pulmonary obstruction, with frothy bloody expectoration, but a diagnosis of mitral insufficiency only had been made.

Dr. J. T. Whitaker, of Cincinnati, said that not the extent, but the site of maximum intensity of a cardiac murmur was the point of importance in auscultatory diagnosis.

Dr. Charles Cary, of Buffalo, stated that the production of a presystolic murmur and its character depended rather upon the vigor of the auricular contraction than upon the valvular condition merely. When the auricle is hypertrophied and the stenosis is marked the transmission is less than when the heart is enlarged and comes in contact with the chest-wall in diastole.

Dr. J. H. Musser, of Philadelphia, cited the case of a middle-aged woman with a presystolic murmur heard at the angle of the scapula and duplication of the second sound heard high up in the axilla. In some cases of hypertrophy of the heart, with distressing symptoms, relief follows the occurrence of dilatation with the development of a mitral regurgitant murmur.

Dr. A. McPhedran, of Montreal, agreed that the usual description of the mitral obstructive murmur is incorrect, and cited the case of a man with this condition who died from pulmonary hemorrhage after having presented for several years extreme dilatation of the right ventricle without hypertrophy. A murmur occupied the entire systole, and was heard over a large extent of the chest, being propagated into the axilla. The loudness of the murmur depends upon the tension of the blood in the pulmonary circulation, and is thus related to the compensation of the right ventricle.

Dr. A. H. Smith pointed out that some murmurs described as diastolic are perhaps partly systolic, as mitral obstruction is, as a rule, associated with incompetency. The systole begins before the cardiac impulse is felt, and ends after the impulse is lost.

Dr. Griffith, in concluding, added that in his cases the point of greatest intensity was in the classic region, the mitral area.

Dr. A. H. Smith, of New York, read a paper on

THE USE OF THE DIFFERENTIAL STETHOSCOPE IN THE STUDY OF CARDIAC MURMURS.

He presented an instrument so constructed that sound-waves reach the drum-membranes through different and distinct channels. This differs from the ordinary binaural instrument simply in having two thoracic extremities instead of one, each connected with its respective ear-piece. This arrangement enables the examiner to hear separately two sounds produced at the same time in two localities more or less distant from each other. The instrument is useful in determining the time rather than the quality of the sounds heard in the different cardiac locations. With its use even a slight dissimilarity in sounds separated by short intervals can be appreciated. Under normal conditions the difference in character between the first and second sounds of the heart is enough to distinguish them from each other, independently of the element of time. Cases, however, occur, and not infrequently, in which neither the character nor the time of the heart-sounds is available for this distinction. In such cases the quality of one or both sounds is marked by the presence of a murmur or so modified by conditions of vascular tension as to be unrecognizable, while at the same time the intervals embraced in the cardiac cycle, instead of being unequal, have the same duration. This latter condition occurs whenever the heart's action is greatly accelerated, as the increase infrequently is chiefly at the expense of the longer intervals. At the same time, with such a rapid action, it is impossible to tell which of the alternate sounds corresponds with the apex-beat or the carotid pulse. Under these conditions, if the murmur is heard at the apex, and if by shifting the stethoscope another is found at the base, it is difficult or impossible to tell whether the two occur simultaneously or successively. The differential stethoscope will here afford important aid in diagnosis if one extremity is placed over the apex and the other over the aortic area. The question as to whether or not duplication of one or both cardiac sounds is due to want of synchronism in the action of the ventricles could also be determined by the use of the differential stethoscope. The successful use of the instrument requires a fairly acute and well-trained ear, with no difference in hearing between the two, and some practice may be necessary to acquire the power of giving separate yet simultaneous attention to the impressions that each ear receives.

Dr. James T. Whitaker, of Cincinnati, pointed out that there is almost always a difference between the two ears in acuity of hearing, sometimes of pronounced degree. Further, it is not the character or the duration of the murmur that furnishes important therapeutic indications so much as it is the condition of the heart-muscle as determined by the frequency and rhythm of action.

Dr. Charles Cary, of Buffalo, read a paper on

THE CAUSE OF THE EXAGGERATION OF SOUNDS OVER THE RIGHT UPPER CHEST, BOTH IN HEALTH AND DISEASE.

He pointed out that all authorities agree that there is a disparity in the physical signs, both in health and in disease, between the superior lobes of the lungs, which has not hitherto been satisfactorily accounted for. By means of a metallic alloy of low fusion Dr. Cary has prepared casts of the bronchial tree, showing that in man the right bronchial tube, supplied to the upper lobe of the right lung, is given off near the right bronchus, some two or two-and-one-half inches higher than the corresponding tube of the left side. This is not an anomaly, but the common arrangement. In some instances the tube arises at a somewhat higher point. In all other respects the bronchial arrangement on the two sides is quite symmetrical. This peculiarity may account for the existence of three lobes in the right lung. In the sheep and in some other animals the first bronchial tube on the right side arises from the trachea, some two-and-one-half inches above the right bronchus. To this peculiarity may be ascribed the auscultatory and tactile differences between the two sides of the chest, both in health and in disease.

DR. CHARLES G. STOCKTON, of Buffalo, read a report of

TWO CASES OF FAT-NECROSIS.

Both occurred in Swedes and within a short time of one another. Post-mortem examination in the one showed the gall-bladder to be small, its walls thickened, and containing numerous dark gall-stones. The mucous membrane of the large intestine showed in places white dots the size of pins' heads, scarcely noticeable. The subperitoneal fat, that of the mesentery, mesocolon, and omentum was abundant. In the fat of the mesentery and mesocolon were imbedded great numbers of round, hard, white masses of variable size, mostly smaller than buckshot, and white and opaque on section. In the mesocolon they were extremely abundant, often soft and becoming confluent. The same conditions prevailed in an extreme degree in the retro-peritoneal fat behind the colon, stomach, and spleen. On removal of the spleen a large cavity was seen extending downward between the left kidney, the colon, and the stomach, and containing a soft cheesy substance resembling pus, in which lay the pancreas. The epithelium of the parenchyma and ducts of the pancreas took no stain. An area of fat-necrosis was seen at the tail of the pancreas. No bacilli were found, except near the head of the pancreas, where there were numerous short, plump bacilli with rounded ends.

In the second case the gall-bladder was found dilated and constricted at middle; the cystic duct was compressed by a fibrous band. About three feet above the ileocecal valve the ileum was bound down by a recent adhesion, on detaching which appeared a cavity as large as a walnut, containing fluid resembling pus and also small, hard masses. The mucous membrane of the colon near the splenic flexure was necrotic and easily torn. The subperitoneal fat of the abdominal wall was sparingly dotted with small, hard, white nodules; similar nodules were also present in large numbers in the mesentery and were also to be seen about the cecum. On removal of the spleen a mass of necrotic tissue was found containing fluid resembling pus, and small, white masses, some hard and some soft. The necrotic portion of the colon was in contact with black necrotic tissue behind it. The fatty tissues about the pancreas were included in the same necrotic area. The outer surface of the pancreas was grayish black and dotted with the same white masses. The epithelium of the pancreatic parenchyma took the nuclear stain poorly, some areas not taking it at all. The interstitial tissue was increased; it contained numerous nuclei and small hemorrhagic spots. A constricted portion of the pancreas showed two spots of fat-necrosis. The capsule was thick and contained numerous hemorrhagic areas. Numerous bacilli, small and large, often forming strings, with square ends, were found in the capsule, extending to a slighter degree into the interstitial tissue.

The opaque white masses in both instances consisted of coarse granules, globules, and crystals, and a small amount of masses of brown pigment. Some appeared to be surrounded by connective tissue. The circumference was infiltrated by round cells. Numerous bacilli were found between the fat cells, about the spots of fat-necrosis, in the second case. These were principally large rods with square ends; there were also some smaller rods with rounded ends. Inoculations from both pancreas and necrotic fat were made, and resulted in the development of bacilli in pure culture. From the fat a bacillus was obtained having rounded ends, and growing both as short oval and long filaments, actively motile, liquefying gelatin rapidly, and flourishing on ordinary media. It appeared to be a variety of proteus. Inoculations in lower animals were followed by suppuration. From the pancreas was obtained a bacillus with rounded ends, growing both as short oval and long filamentary forms, not motile or but slightly so, not liquefying gelatin, growing in ordinary media, coagulating milk, producing gas and an acid reaction in 2 per cent. glucose, giving a faint indol-reaction, and behaving like the bacillus coli commune. Inoculation in lower animals induced local suppuration.

DR. R. H. FITZ, of Boston, referred to experiments in which fat-necrosis was induced by means of the pancreatic secretion. He pointed out that necrosis of the fat of the abdominal wall was not uncommon, but was not usually recognized. It is the subperitoneal and not the subcutaneous fat that is thus affected. All pancreatic disease is not necessarily attended with fat-necrosis. The association is most common with hemorrhagic pancreatitis with gangrene.

(To be concluded.)

AMERICAN SURGICAL ASSOCIATION.

Annual Meeting, Held at New York City, May 28, 29, and 30, 1895.

FIRST DAY—MAY 28TH.

A discussion on the operation for

THE RADICAL CURE OF HERNIA

was opened by DR. JOHN H. PACKARD, of Philadelphia, who stated that most hernias do not come down under the infundibuliform fascia, as has so often been stated, and in proof of this he gave the results of a number of dissections of elderly subjects. He said that if an inguinal hernia comes down and pushes its way into the scrotum, we should find a very large variety of what are known as infantile hernias. He expressed the opinion that the existing theories as to the course pursued by an oblique inguinal hernia are incorrect. In conclusion, he spoke briefly of his method of performing the operation, and stated that in two recent casess, one in a man fifty-four years of age, and another in a little girl thirteen years of age, the hernias had not descended since the operation, even when the patients coughed violently.

DR. CHARLES MCBURNEY, of New York, said that he considered the presence of the cord and of the transversalis fascia about the entrance of the canal of the utmost importance in the anatomy of inguinal hernia. The sac having been removed, the object should be to prevent its reformation. Brief reference was made to the McBurney operation, which was first used at a time when something very different from that which was then in existence was needed. The recurrences after this operation had been about 30 per cent., and any operation that gave such proportion of recurrences is not to be recommended at the present day. The opinion was expressed that the operation of Dr. Halsted is the most perfect in the treatment of inguinal hernia now in existence.

Dr. John E. Owens, of Chicago, said that he did not entirely agree with Dr. McBurney regarding the importance of removing the sac, but thought it better to retain it and fold it up into a plug. He referred to the length of time that a patient could be kept in bed after an operation, and mentioned the case of one of his patients that had gone home on the eighth day, but who was compelled to take to his bed immediately thereafter.

Dr. Halsted said that he would caution surgeons against making too indiscriminate excision of the veins in the operation that bore his name. He said that his operation had been performed in 180 cases, in three of which there had been recurrence, and in all of which the veins were removed if enlarged, these aggregating 75 per cent. of the cases. The reason for care in excising the veins is that in many cases loss of the testicle followed, but most people would prefer to take one chance in fifty or sixty of losing a testicle than to take one chance in four or five of having the operation done over again, when excision of the veins was deemed absolutely necessary to prevent recurrence. Opening of the sac is necessary for several reasons. As to the time patients should be kept in bed, three weeks are too long.

Dr. Cabot suggested that the oblique canal should run backward instead of downward.

Dr. Warren spoke of the adhesions that he had found upon opening the abdominal cavity a week after an operation, and which had disappeared upon further examination three months later.

Dr. Charles B. Nancrede said that he always insisted upon his patients staying in bed at least six weeks after operation.

Dr. Vander Veer, of Albany, N. Y., said that he had been somewhat disappointed in using catgut sutures, and had found that silkworm sutures were very much better.

Dr. J. William White, of Philadelphia, read a paper entitled

THE RESULTS OF TREATMENT OF HYPERTROPHY OF THE PROSTATE.

He referred to the theory that prostatic hypertrophy is the natural process of age; according to another view, it is the result of various causes, among others excessive sexual intercourse. Changes caused in the male by the change in the testicles correspond to those in the female due to change in the ovaries. It was contended that the testicles secrete spermatic fluid for a considerable time after spermatozoa cease to exist in it, and after the loss of reproductive power. The functions of the testicles are twofold, that of reproduction of the species and that of imparting masculinity to the individual. Dr. White had collected 111 cases of double castration for prostatic hypertrophy. The cases were of the worst nature, and had been treated by different surgeons. One, in fact, had been considered hopeless previous to the operation, and yet the patient was greatly benefited. Among the whole number there were twenty deaths, several of which were due to existing complicating conditions.

The following conclusions were formulated:

1. The function of the testes, like that of the ovaries, is twofold: the reproduction of the species, the development and preservation of the secondary sexual characteristics of the individual. The need for the exercise of the latter function ceases when full adult life is reached, but it is possible that the activity of the testes and ovaries in this respect does not disappear coincidently, and that hypertrophies in closely allied organs, like the prostate and the uterus, are the result of this misdirected energy. This hypothesis would increase the analogy between the fibro-myomata of the uterus and the adeno-fibromata of the prostate, which, from a clinical standpoint, is already very striking, and is further strengthened by the almost identical results of castration in the two conditions.

2. The theoretic objections that have been urged against the operation of double castration have been fully investigated by clinical experience, which shows that in a very large proportion of cases (thus far approximately 87.2 per cent.), rapid atrophy of the prostatic enlargement follows the operation, and a disappearance or great lessening in degree of long-standing cystitis (52 per cent.), more or less alteration of vesical contractility (66 per cent.), amelioration of the most troublesome symptoms (83 per cent.), and the return of local conditions not very far removed from normal (46.4 per cent.), may be expected in a considerable number of cases.

3. The deaths have been 20 in 111 cases, a percentage of 18; but of these there seemed to be 13 that may fairly be excluded in an attempt to ascertain the legitimate mortality in patients operated upon under surgically favorable conditions—*i. e.*, before the actual onset of uremia, or, better, before the kidney has become disorganized by the two factors, rarely absent in advanced cases, backward pressure and inflammation. This, then, would leave a mortality of 7.1 per cent., which would probably be decreased as advancing knowledge permits of a better selection of cases. It is important to know that even in desperate cases, which make up this series of deaths, 15 (75 per cent.) showed improvement of symptoms or shrinkage of the prostate, before they died.

4. A comparison with other operative procedures seems to justify the statements that, apart from the sentimental objections of aged persons on the one hand, and the real, entirely natural, and very strong repugnance to the operation felt by younger persons, castration offers a better prospect of permanent return of normal sexual conditions than does any other method of treatment. The relatively greater degree of improvement in successful cases should be considered, as well as the mortality, in comparing the operation with the various forms of prostatotomy and prostatectomy. So too, should the absence of any risk of permanent fistulæ, peritoneal or suprapubic, and the ease and quickness with which the operation may be performed.

5. The evidence as to unilateral castration is at present contradictory, but there can be no doubt that in some cases it is followed by unilateral atrophy of the prostate, and in two cases at least this has resulted in a

very marked improvement of symptoms. It is worthy of further investigation.

6. Experiments on dogs have shown in nearly every case in which the vas deferens was tied and divided on both sides that without much change in the testicles there was beginning atrophy and considerable loss of weight of the prostate. These experiments need repetition and confirmation, as the absence of corresponding testicular change seems to make the results somewhat anomalous. It is possible that the occlusion or severance of small but important nerves may account for the effect on the prostate.

7. Ligation of the vascular constituents of the cord, or of the whole cord, produces atrophy of the prostate, but in these experiments only after first causing disorganization of the testes.

AT A CLINIC HELD AT THE BELLEVUE HOSPITAL,

DR. LEWIS A. SAYRE presented the patient on whom the first successful excision for hip-joint disease had been performed. He briefly reviewed the history of this operation up to the present time, and showed three other cases that were operated upon many years ago, in each of which the result was most gratifying, complete motion of the joint being secured with but very little if any shortening of the limb.

DR. PHELPS showed several cases of fracture of the patella, and stated that he had operated upon over one-hundred, only two of which had given him any trouble, the results in every other case having been very good, in some cases perfect motion having been obtained at the end of the sixth week.

DR. FRÜHRER showed a large number of instruments that he has devised, and the uses of which he explained at considerable length. Among other instruments shown were several varieties of sounds, drills, probes, and other instruments used in genito-urinary surgery.

DR. ALEXANDER showed a couple of cases illustrating his method of performing prostatectomy. The first case was operated on in 1894, and the advantage claimed for the method was the very small amount of hemorrhage that resulted.

DR. MARKOE presented several cases in which he had removed the spleen, because of pain and enlargement of this organ. In each instance the patients were relieved and improved very much, one having gained no less than thirty-one pounds.

DR. WOOLSEY stated that he had removed a stone from the esophagus of a patient, whom he presented, and that he had operated in a like manner on twenty-eight cases, in all of which recovery ensued.

DR. MEYER detailed the case of a little girl from whom a portion of the upper jaw had been removed for malignant disease, in which the deformity was almost *nil* and only a very slight scar resulted.

DR. F. S. DENNIS showed several cases, including two in which he had operated for sarcoma, one for removal of carcinoma of the breast, one for resection of the hip-joint, and one for ankle-joint disease, in which the lower end of the fibula was removed. In all the results were excellent.

AT A CLINIC AT THE PRESBYTERIAN HOSPITAL,

DR. BRIDDON showed three cases, one in a man suffering from large and extensive infiltration of the glands of the groin on both sides; the second in an Irishman with a tumor on the sternal end of the clavicle and a lump in the stomach, which was thought to be carcinoma; and the third that of a little girl with a very pronounced carcinoma. In the first case a successful operation was performed, but in the second and third nothing of an operative nature had yet been done.

DR. PILCHER showed an interesting case of anterior meningo-encephalitis in a child one year old, upon whom he had performed two operations, each time removing large protrusions in front of the nasal bones. Primary union was secured, and the child bore the operations very well.

Reference was made to the treatment of fractures of the lower extremities and to the possibilities of so applying plaster bandages in cases of fracture below the knee that the weight of the body shall be received upon the parts above the point of fracture, the fracture remaining suspended below. Several cases were presented in which this method had been employed, in each of which the result was very good. Fifteen or twenty cases had been treated by this method; some of the patients were able to walk away from the hospital within a few hours, and continued to walk about without other aid than that of a cane, until the fracture was entirely healed.

DR. J. S. WIGHT, of Brooklyn, showed three cases of carcinoma, all of a very serious nature, and in each of which operation yielded good results. He further showed a case of broken thigh-bone in a patient whose legs were bent directly backward. After repairing the broken thigh-bone the legs were straightened by removing 4½ inches of bone from each one, the effect being that the patient has been able to walk about quite well ever since.

DR. MCCOSH showed several patients, upon one of whom he had recently performed thyroidectomy for exophthalmic goiter, with good effects; another from whom one very large and several small stones were removed from the common bile-duct, with excellent results; a third, upon whom operation had been performed seven days previously for a congenital hernia of the Fallopian tube and ovary, the patient so far having done well; a fourth, with a neoplasm or carcinoma of the cecum, which was incised, the peculiarity about the case being the extreme age of the patient; and a fifth, in whom the diagnosis of possible abscess of the brain was made, which was found upon operation to be the case, and eight ounces of pus were removed.

DR. BROWN showed an instrument that he had devised for perineal section.

SECOND DAY—MAY 29TH.

DR. PILCHER, of Brooklyn, stated that since 1893 it has been demonstrated that after removal of the testicles in aged men a rapid disappearance of prostatic overgrowth takes place in many cases, although this desirable result does not follow in all. Only such enlargements that produce obstruction to the flow of urine become the objects of surgical attention. Glandular elements may preponderate in the enlargement, but muscle-fiber is the chief element, although glandular, muscular, and fibrous elements frequently all take part. The relation of castration to various pathologic conditions is very different, and the sudden obstructions due to congestive accidents, of course, do not call for castration. If the enlargement is due to fibrous hyperplasia, one would expect comparatively little effect upon the size of the altered prostate from the removal of the testicle. Reference at considerable length was made to two cases of double orchectomy, the one for prostatic hypertrophy in a man seventy-four years of age, and the other for chronic orchitis in a man sixty-seven years of age. In the first case symptoms of prostatic obstruction had been present for twenty years, but the patient had never used a catheter. The man came under observation for temporary complete retention. The bladder was distended to a level four inches above the pubes, and rectal touch demonstrated a greatly enlarged prostate. Both testicles were removed. While the patient was being anesthetized attempts were made to introduce various catheters without success. Primary union took place, and on the sixth day after the operation a catheter was passed with ease, and thirty-two ounces of urine were voided. The patient's general health improved greatly, so that he became able to pass spontaneously about one ounce of urine at a time. Rectal examination shows that the apparent size of the prostate is the same as at the first examination.

The second patient had suffered for fourteen years from anal neuralgia. When a young man he had had double hydrocele, which was cured after tapping. Both testicles were extirpated under chloroform, and as the effect of the anesthetic wore off violent delirium manifested itself. The temperature and pulse rose steadily until the sixth day, when they were respectively 102.5° and 145 per minute. Primary healing of the wound took place, but the patient died from exhaustion on the sixth day.

DR. ARPAD G. GERSTER, of New York, stated that his experience was limited to three operations. In one of these, in a man, seventy-five years of age, fairly well preserved, with a very large prostate, which had been giving trouble for ten years, the result was unfavorable. The other two cases had passed from observation. In the first case the condition became so desperate that something was demanded for relief, and double castration was suggested. The operation was performed with very little loss of blood, and the patient made a good recovery. A copious discharge from the urethra followed, and considerable blood came away in the urine, which apparently flowed from the prostate into the bladder. The patient's condition, however, gradually deteriorated, and he was taken to the operating-room, under the suspicion that there might be an abscess of the prostate, which turned out to be the case. Death ensued on the eleventh day after operation. This case shows that the operation is not so free from danger as some think. Many objections to the operation are raised by men who have never tried it, but it is the duty of all surgeons to investigate the subject.

Two other cases occurred during Dr. Gerster's service at the hospital, the operations being performed by another surgeon. In one of these cases there was an enormously enlarged middle lobe of the prostate, and the man was in agony all the time, but two weeks after operation he was able to void urine without the use of the catheter. One other case was seen in consultation. In this case the patient was, after the operation, able to pass his urine without difficulty.

DR. W. H. CARMALT, of New Haven, said that as an adenoma is primarily the preliminary stage of carcinoma, in conditions of hyperplasia and affections of the prostate causing obstruction it might be well perhaps to prevent the occurrence of carcinoma by castration.

DR. ALEXANDER, of New York, expressed the opinion that the results obtained within a few days after double orchectomy were due largely to the aseptic catheterization by the surgeon and not to the operation. The facts connected with the operations are not reported with sufficient fulness, and the operation is yet to be considered a physiologic experiment.

DR. JOHN H. PACKARD, of Philadelphia, said that one point appeared to be entirely overlooked in this discussion, namely, the stage of the disease at which the operation should be performed. He referred to the case of a very intelligent German, about seventy years of age, who had kept a memorandum of his control of the bladder for every day for four months. Previous to the operation the patient could not hold his urine more than an hour, but one week afterward he held it for three hours, and this time rapidly increased to four and five hours.

DR. THEODORE A. MCGRAW, of Detroit, stated that he was very much impressed with the results of the operation. He cited a case in which ten days after operation the patient was able to pass a large stream. He had also operated on an old man, who immediately thereafter seemed to get some relief, but the trouble returned and the patient died. As to the question whether or not taking out one testicle would have any effect, reference was made to the case of an ex-Governor of Michigan, in whom no effect whatever was produced upon the prostate after one testicle had sloughed completely away.

DR. F. H. GERRISH, of Portland, Me., read a paper entitled

THE RELATIONS OF THE LYMPHATIC SYSTEM TO THE VARIOUS REGIONS.

He stated that there is probably no chapter in anatomy less understood by the average medical man than that devoted to the lymphatic system. The lymphatics are less regular in their course and relations than any other part of the vascular system. Diagrams were presented to show the usual relations between each group of those glands which are accessible to operative procedure. A distinction was made between the parotid and internal maxillary nodes, often included under the former name, the one being situated upon and in the parotid gland, the other on the side of the pharynx just behind the buccinator muscle.

A paper on

THE FEMALE GENITAL ORGANS, INCLUDING THE UTERUS AND VULVA,

by DR. JOHN HOMANS, of Boston, was read by title.

DR. P. S. CONNER, of Cincinnati, read a paper entitled

CARCINOMA OF THE LIP, TONGUE, FLOOR OF MOUTH, AND PHARYNX.

He said that carcinoma is for a time local, and its generalization is practically altogether through the lymphatics. Reappearance in the immediate vicinity of the primary growth is evidence of incomplete removal; in the neighboring glands, failure to discover and remove glands already infected. No operation fulfils the indication that does not effect the extirpation of the whole disease, but, when from the location and extension, the new-growth cannot be thoroughly removed, that operation is best which, saving life for the time being, secures longest immunity from secondary growths, external and internal.

Carcinoma of the lip commonly affects more or less widely the free border, with a limited infiltration of the underlying tissues. So long as its locality is restricted, it can be safely removed by the ordinary excision of a V-shaped mass, all the diseased area being taken away. In the majority of cases, however, the disease is not thus limited. In a few months after the initial lesion infiltration of a gland or glands under the jaw has generally taken place. To this secondary lymphatic disease is due the great majority of the 60 or 65 per cent. of failures to effect a cure. In all cases in which any enlarged gland, be it ever so small, can be felt it should be cut down upon and removed.

Carcinoma of the tongue is seen in about one-tenth of all the subjects of carcinoma. Glandular enlargement is generally present and develops early. The end-result of operations has been far from satisfactory, the mortality being high and recurrence very constant.

The diagnosis once established, free excision of the affected area should be effected without delay, so that glandular involvement may possibly be prevented. Even if the malignancy of the ulcer or the tumor is questionable, but little time should be lost in removing the doubt. Far better that now and then a tuberculous or syphilitic tongue should be unnecessarily operated upon than that a carcinoma should be allowed widely to extend its area. The best method of operating must be determined by the conditions of the individual case. When the growth has existed but a short time, and is located in the free portion of the tongue, ablation of that portion should be effected with the knife, or, better, the scissors. Any operation through the mouth, unless performed very early and for a limited disease of the tip or possibly of the side of the tongue, should be supplemented by an exploratory incision in the submaxillary region and the removal of enlarged glands. If, however, the percentage of recoveries is to be materially increased, operation in this region must be thorough and complete, and the tongue should be approached through the neck and the floor of the mouth, as along such route only is it practicable to reach all the infected tissues. Hemorrhage can be reduced to a minimum by ligating the vessels as they are reached, especially the linguals, or by the use of hemostatic forceps and ligations in the wound. The advantages of extra-buccal operations are the more thorough drainage thus secured and the greater facilities afforded for maintaining approximately a septic condition of the wound.

Carcinoma of the pharynx, other than by direct extension from contiguous parts, is rare, and affects almost entirely the soft palate or the tonsils. When secondary and associated with grave disease of the tongue or cheek, operative interference is, as a rule, useless, and can only hasten the necessarily fatal termination of the case. If primary and confined, it can be readily removed by scissors or cautery, and if early and widely done such extirpation is not unlikely to secure exemption from recurrence.

(To be concluded.)

THE FORTY-FIFTH ANNUAL MEETING OF THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA.

Held at Chambersburg May 21, 22, 23, and 24, 1895.

(Continued from page 625.)

Dr. J. M. Baldy, of Philadelphia, read a paper on the

PROPHYLAXIS OF PELVIC INFLAMMATIONS IN WOMEN.

The main cause of pelvic inflammation is gonorrhea of the gravid or non-gravid uterus. The only prophylactic treatment is to attack the gonorrheal disease before involvement of the tubal mucosa has occurred. Even after this does take place rigorous treatment of the original site of the disease will often abort a pelvic attack. Puerperal sepsis is the second great cause of pelvic inflammations. As soon as fetid lochia and other signs of beginning sepsis are noted the uterus and vagina should be thoroughly washed out and curetted. Gauze, if introduced into the uterus, will prevent the danger of further infection from the vagina, but does not act as a drain from above.

Dr. Samuel D. Risley, of Philadelphia, read a paper on

OCULAR AFFECTIONS ASSOCIATED WITH LITHEMIA.

The lithemic diathesis stands second to syphilis only in the number of its victims. He has repeatedly encountered cases in which the entire trouble disappeared under antilithemic treatment. It can hardly be supposed that the eye-vessels will escape the general involvement of the vascular system of the body.

Dr. H. R. Wharton, of Philadelphia, read a paper on

THE TREATMENT OF NEVUS.

The varieties of nevus most commonly met are the capillary, the port-wine mark, a form of the capillary of some size, and the venous nevus, of purple or bluish color, and at times containing blood-cysts. All forms of vascular tumors in young children should be carefully watched, and if any increase in size be noted they should be operated upon. In cases of capillary nevus cauterization with nitric acid by means of a match-stick may answer. Electrolysis is also of service in the treatment of this form. The treatment of the port-wine mark is by multiple incision. In the treatment of venous nevus various methods have been employed. The elastic bandage may be used to control the hemorrhage and the tumor be excised. If very large, harelip-pins may be passed under the tumor and a ligature applied. This is followed by sloughing, granulation, and cicatrization. Dr. Wharton has used the subcutaneous ligature with good results. If ulceration has occurred, the actual cautery or the galvano-cautery must be employed.

Dr. Ernest Laplace, of Philadelphia, presented a

REPORT OF ONE-HUNDRED AND TWENTY FIVE CASES OF HERNIA IN WHICH THE RADICAL CURE WAS PERFORMED.

He uses a portion of the sac to act as a plug, excising the rest. In large sacs he lays open the lesions, closes the ring, and packs with iodoform-gauze. He does not believe in following any one method. The ring he always considers as a wound through the abdominal wall, which it is his duty to close, either by sutures or by plugging with omentum or portion of the sac. There were two deaths in his series, one from strangulated umbilical hernia in a fat woman, and the other from hemophilia and leukemia. Bassini's method is safe and sure, and prevents all danger of strangulation.

Dr. Thomas J. Mays, of Philadelphia, read a paper on

FAT IN PULMONARY CONSUMPTION.

The proteids, he said, are of greater value in the production of fat in the body in "consumption" than they were formerly thought to be. The fats ingested do not go to form fat. Beef-juice, mutton, lamb, eggs, milk are all better fat-producers. Melancholia has a special tendency to run into tuberculosis, while fat is inimical to mental despondency. Strychnin with suitable rest and appropriate food is the best treatment for incipient tuberculosis. The proteids and carbohydrates are superior to fats in the production of fat, and the fats are overestimated in this respect.

By invitation Dr. Thomas S. Cullen, of Baltimore, Md., read a paper on

CARCINOMA OF THE UTERUS.

There are three varieties of carcinoma of the uterus: 1. Epithelioma, involving the squamous epithelium and extending down into the vagina. 2. Adeno-carcinoma in the cervical canal, extending laterally and so gravely involving the tissues of the cervix that the latter become soft and friable, and may pull off. This is the most dangerous variety and the most rapid in growth. 3. That involving the epithelium of the fundus. This is the most favorable form. Pieces of the cervix for microscopic examination should be placed in a 10 per cent. solution of formalin.

RUPTURE OF THE TENDON OF THE QUADRICEPS EXTENSOR FEMORIS

was the title of the paper by Dr. J. J. Buchanan, of Pittsburg. This is a comparatively rare accident. There are only about 120 cases reported. In reporting such cases the nature of the lesion should be well described, the site of rupture noted, as well as the length of the rupture, the degree of separation, and the amount of permanent disability. An imperfect result occurs in about one-half of all cases. The indications for treatment are the same as for fracture of the patella. The application of buried sutures is the ideal method of treatment, but too few cases so treated are on record to arrive at any definite conclusions. Two classes of cases may be described: 1. Rupture of the central portion of the tendon. 2. Those cases in which the expansions of the vasti muscles are also torn. This latter class is usually followed by poor results, even under the best of surgical treatment. The open incision is probably better here.

Dr. L. J. Lautenbach read a paper entitled

DEAF MUTES—CAN ANYTHING BE ACCOMPLISHED BY TREATMENT?

He treats such cases by massage applied to the drum-head and external meatus. This massage he divides into three classes: Pneumo-massage, phono-massage, and the mixed massage. Pneumo-massage is the employment of distention of the internal ear. He reports excellent results following this method in cases considered as hopelessly deaf. Even when all ear-tests fail a negative prognosis must not be given.

Among the other interesting papers noted were the following:

EXPERIENCE IN THE TREATMENT OF DIPHTHERIA DURING THIRTY-FOUR YEARS OF PRACTICE,

by Dr. William S. Stewart, of Philadelphia;

THE PRESENT STATUS OF THE SANITARY MOVEMENT FOR THE ADOPTION OF THE INDIVIDUAL COMMUNION-CUP,

by Dr. H. S. Anders, of Philadelphia;

DIAGNOSIS AND TREATMENT OF ACUTE INTESTINAL OBSTRUCTION,

by Dr. James M. Barton, of Philadelphia;

THE ADDRESS IN HYGIENE,

by Dr. Hildegarde H. Langsdorf, of Carlisle;

TEN MINUTES IN MEDICAL ELECTRICITY,

by Dr. George S. Hull, of Chambersburg;

NECESSITY FOR THE ADVERTISEMENT AND ISOLATION OF CERTAIN CONTAGIOUS AND INFECTIOUS DISEASES,

by Dr. F. Le Moyne, of Pittsburg;

REPORT OF A SERIES OF CASES OF LARYNGEAL DIPHTHERIA TREATED WITH THE ANTITOXIN, WITH AND WITHOUT INTUBATION,

by Dr. Edwin Rosenthal, of Philadelphia (see p. 633);

ANOTHER WORD ON ADENOID GROWTHS OF THE PHARYNX,

by Dr. Harrison Allen, of Philadelphia;

THE ADDRESS IN OBSTETRICS,

by Dr. W. B. Ulrich, of Chester;

THE ADDRESS IN SURGERY,

by Dr. C. L. Stevens, of Athens;

THE ADDRESS IN OTOLOGY,

by Dr. L. H. Taylor, of Wilkesbarre;

THE ADDRESS IN MENTAL DISORDERS,

by Dr. F. X. Dercum, of Philadelphia;

THE MENTAL INFLUENCE IN THE TREATMENT OF DISEASE,

by Dr. Theodore Diller, of Pittsburg;

DIAGNOSIS OF GASTRIC LESIONS BY MODERN METHODS,

by Dr. S. Solis-Cohen, of Philadelphia.

AMERICAN PEDIATRIC SOCIETY.

Seventh Annual Meeting Held at Hot Springs, Virginia, May 27, 28, and 29, 1895.

First Day—May 27th.

The President, Dr. F. Forchheimer, of Cincinnati, read his annual address, in which he quoted from the work of Donovan, written in the latter part of the eighteenth century, and drew comparisons between the views of that author upon the management and treatment of children and those held at the present day.

Dr. T. M. Rotch, of Boston, reported a case of cerebro-spinal meningitis in an infant six days old.

Dr. William F. Lockwood, of Baltimore, reported three cases of purulent otitis media in children ending fatally from cerebral involvement, or sinus-involvement, or from general pyemic infection.

A case of pyo-pneumothorax was reported by DR. WALTER L. CARR, of New York, the succussion-splash being impossible of development.

DR. S. S. ADAMS, of Washington, reported a case of traumatic aphasia in a boy, echolalia being the form of aphasia presented, without further cerebral symptoms. Recovery ensued in spite of intercurrent attacks of scarlatina anginosa and croupous pneumonia.

A series of cases of hyperpyrexia was reported by DR. HENRY D. CHAPIN, of New York.

Three specimens of sarcoma occurring in children were shown. DR. J. HENRY FRUITNIGHT, of New York, reported and showed the specimen from a case of sarcoma of the kidney. The propriety of and necessity for early operation were prominently brought out in the discussion upon the paper.

DR. AUGUSTUS CAILLÉ, of New York, showed a specimen of sarcoma of the left suprarenal capsule from a newly born infant. Hemorrhagic degeneration of the center of the growth had formed a cyst-like cavity in the interior. Owing to the size and position of the growth its differentiation from an enlarged spleen might during life have been a matter of considerable difficulty.

The third specimen was one of lympho-sarcoma of the spleen presented by DR. GEORGE N. ACKER, of Washington.

DR. F. GORDON MORRILL, of Boston, opened the discussion on the use of the diphtheria-antitoxin, with a paper upon the efficiency of the remedy as an immunizing agent, and related the histories of a large number of cases wherein its use had prevented the occurrence of endemics of diphtheria in hospital practice.

DR. AUGUSTUS CAILLÉ, of New York, followed with a paper based upon the results obtained in his personal experience by the use of curative injections, and also reported, without comment, five cases of marasmus or hereditary syphilis wherein death followed shortly after the injection by another physician of equine serum. In one case the superficial lesions of hereditary syphilis rapidly disappeared between the time of injection of the serum and the fatal ending.

DR. A. SEIBERT, of New York, then read a paper upon the value of the antitoxin of diphtheria and its toxic after-effects.

In the general discussion that followed the reading of these papers additional evidence of the value of the remedy was advanced, one of the speakers, however, condemning its use as being not only inefficient but actually harmful. The weight of argument lay decidedly in favor of its continuous employment.

DR. E. M. BUCKINGHAM, of Boston, read a paper entitled

CASES APPARENTLY DIPHTHERIA, BUT IN WHICH THE DIPHTHERIA-BACILLUS IS NOT FOUND.

SECOND DAY—MAY 28TH.

The topic allotted for consideration was

THE DIFFERENT FORMS OF ERUPTION WHICH SIMULATE SCARLATINA AND THEIR DIFFERENTIAL DIAGNOSIS.

DR. A. D. BLACKADER, of Montreal, discussed the various forms of eruption that resembled that of scarlatina, including the drug-eruptions and those due to other systemic diseases. DR. CHARLES G. JENNINGS, of Detroit, related cases of scarlatiniform exanthem. DR. LOUIS STARR, of Philadelphia, reported several cases of scarlatina that presented but poorly marked constitutional disturbance, although the eruption was intense and characteristic. Two cases of marked redness with purplish tinge in the skin after desquamation were dwelt upon, and water-colors of one of them with a photograph of glove-like exfoliation of the epiderm were shown. DR. JAMES C. WILSON, of Philadelphia, reported a case of marked symmetrical gangrene occurring in the course of scarlatina, and referred to two other cases from the literature of the subject. DR. J. P. CROZER GRIFFITH, of Philadelphia, requested that his paper might be read by title, as the division of the subject allotted to him, "Difficulty in Differential Diagnosis," had been practically covered by earlier speakers. He remarked upon the close resemblance between the photograph showing glove-like exfoliation, that was exhibited by Dr. Starr, to the photographs of acute exfoliating dermatitis accompanying an article by Blanc in a volume of the *International Clinics*.

DR. A. SEIBERT, of New York, read a paper upon

THE LOCAL TREATMENT OF THE SKIN IN THE ERUPTIVE FEVERS OF CHILDREN,

in which he advocated the use of ointments containing ichthyol, although no specific constitutional effect was claimed for its use.

In the general discussion that followed, the fallibility of all of the classic text-book symptoms as a guide to the diagnosis of scarlatina was emphasized.

DR. L. EMMETT HOLT, of New York, read a paper upon

INANITION-FEVER IN THE NEWLY BORN,

and related cases illustrating the condition. The main argument of the paper was the necessity for taking the temperature of the child as well as that of the mother, and the necessity for administering water and a suitable amount of nourishment to children insufficiently nourished by the mother. The temperatures attained were in some cases quite high. The administration of water and of suitable quantities of proper nourishment rapidly caused a fall of temperature to normal.

In the discussion that followed, the need of flushing out the system, and especially of ridding the kidneys of uratic infarcts by the use of water, was insisted upon, and the view was advanced that the temperature-rise was due, not to inanition or to the infection of the digestive tract by micro-organisms, but was caused by the retention of waste products within the organism.

DR. HOLT, in reply, stated that he had used the term inanition-fever owing to lack of a more definite term, but that he did not doubt that the explanation of the etiology given in the discussion might be the correct one.

DR. B. K. RACHFORD, of Cincinnati, read a paper entitled

REFLEX IRRITATION AS A CAUSE OF NEUROTIC DISEASE IN CHILDREN.

He did not agree in the view recently gaining ground that peripheral irritation had in past times been held in too great prominence as a cause of nervous disturbances, and summarized the physiologic and histologic work done upon the question of nerve-cell tire and consequent instability of nerve-centers.

Dr. A. Jacobi, of New York, reported and showed photographs of a case of pygopagus. The twelve preceding cases reported in the past four-hundred years were briefly described.

Dr. William Osler, of Baltimore, reported two cases of adherent pericardium in children, with enormous heart-hypertrophy, chronic proliferative peritonitis, and recurring ascites.

A specimen of traumatic rupture of the bladder was shown by Dr. John Dorning, of New York.

The following cases of congenital heart disease were reported and specimens of most of them shown: Cor biloculare; heart with pulmonary veins opening into the right auricle, imperfect ventricular septum in a man aged forty-five years, by Dr. William Osler; aorta arising from the right auricle, by Dr. George N. Acker, of Washington; patent ventricular septum, by Dr. A. Jacobi, of New York; congenital endocarditis, by Dr. Christopher, of Chicago; imperfect closure of auricular and ventricular septum in the heart of a man dying at the age of forty-five years, by Dr. Frederick A. Packard, of Philadelphia; and a case of congenital deformity of the heart, by Dr. L. Emmett Holt, of New York.

Morning Session—May 29th.

Dr. Dillon Brown, of New York, showed and described a new extractor for the removal of intubation tubes.

Dr. Augustus Caillé, of New York, read a paper upon

TAPPING THE VERTEBRAL CANAL IN THE LUMBAR REGION,

in which a brief review of the literature of the method was given. An anatomic preparation of the lumbar vertebræ was shown to illustrate the ease with which the operation could be performed.

The characteristic features of the recent epidemic of influenza (1894 and 1895) were discussed, the discussion being opened with papers by Dr. L. Emmett Holt, of New York, and Dr. A. D. Blackader, of Montreal. In the discussion of the subject the importance of more general disinfection of rooms after attacks of the disease and removal of convalescent patients from the room occupied during the illness was urged.

The following papers were read by title: "Tetanus Neonatorum," by Dr. J. Lewis Smith, of New York; "Infantile Tetany," by Dr. M. P. Hatfield, of Chicago; "Tetany (Two Cases)," by Dr. Floyd M. Crandall, of New York; "Tetanus Neonatorum," by Dr. Irving M. Snow, of Buffalo; "Typhoid Fever in Infants under Two Years—Is it Frequent?" by Dr. William Perry Northrup, of New York; "Cases of Scurvy," by Dr. A. Jacobi, of New York; "Case of Ossified Cephalhematoma," by Dr. F. Huber, of New York.

On motion of the Society, it was decided that the next annual meeting be held at Montreal in the latter part of May, 1896.

NEWS ITEMS.

Munificent Endowments for the University of Pennsylvania.—By the will of Mr. E. A. W. Hunter, a retired business man, who died at Berwyn, near Philadelphia, on May 28th, about $500,000 will revert to the University ot Pennsylvania upon the death of the widow and an only child. The principal of the bequest is to be used for the establishment of a surgical ward in memory of the late Dr. D. Hayes Agnew and a son of the testator, Dr. Charles Hunter, who died several years ago.

Mrs. Thomas A. Scott has donated to the University the sum of $5000, to be used in fitting up a surgical amphitheater in the new Agnew pavilion, to be known as the "Thomas A. Scott Amphitheater."

Mr. Charles C. Harrison, who for a year has been acting provost, and who has been elected provost, has offered to create a fund of $500,000 for the University in memory of his father, the late George Leib Harrison, and to be known as the George L. Harrison foundation for the encouragement of liberal studies and the advancement of knowledge.

Gross Monument.—The statue to be erected to the memory of the late Professor Samuel D. Gross is now under contract, and the artist, Mr. Calder, is at present in Europe with his models arranging to have it cast in bronze. The models were inspected by Mr. St. Gaudens, the distinguished American sculptor, and approved as being very fine. Congress has appropriated $1500 for the expenses of the foundation, and authorized the engineer corps of the army to select the site for its erection. The place selected is in the Smithsonian grounds at Washington, near to the Army Medical Library. The statue is to be of standard bronze, representing Dr. Gross holding a scalpel in his right hand, and in the act of operating at a clinical lecture. It is to be nine feet high and upon an appropriate pedestal. The money has all been secured through the joint efforts of Drs. J. R. Weist, W. W. Keen, and C. D. Mastin, representing the American Surgical Association and the Medical Alumni Association of Jefferson Medical College.

National Association of State Medical Examining and Licensing Boards.—A permanent national organization of the various State Medical Examining and Licensing Boards was effected at the American Medical Association meeting, May 9, 1895, at Baltimore, Md. Officers were elected for the ensuing year as follows: *President*—W. W. Potter, M.D., Buffalo, N. Y.; *Vice-President*—J. M. Hays, M.D., Greensboro, N. C.; *Secretary*—B. M. Griffith, M.D., Springfield, Ill. *Committee to Draft Constitution and By laws*—Charles McIntire, M.D., Easton, Pa.; W. W. Potter, M.D., Buffalo, N. Y.; N. Payne, M.D., Albany, N. Y.

The purposes of the Association are to establish a uniform schedule of requirements for all medical colleges and examining boards, and assist in perfecting a method for higher medical education.

Dr. J. Marshall Hawkes, of New York City, died May 26, 1895, of osteitis of the mastoid bone following an acute attack of purulent inflammation of the middle-ear. Dr. Hawkes was well known on account of his work in orthopedic surgery, notably for his paper spinal jacket. He was born in Gorham, Mass., in October, 1847; served a year-and-a-half in the late war with the Fourth Maine Battery, and later entered Dartmouth College, N. H., where he first began to study medicine. He was a graduate of the College of Physicians and Surgeons of New York City, and an active member of the County Medical Association of New York. He was also a member of the G. A. R. and a Mason.

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The Mississippi Valley Medical Association will hold its twenty-first annual meeting at Detroit, Mich., September 3, 4, 5, and 6, 1895. Assurances have been received from the railroad companies that one fare for the round trip will be the rate. Dr. William Pepper, of Philadelphia, will read the annual address on "Medicine."

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Zeitschrift fur Sociale Medicin is the title of a new publication dedicated to the advancement of the general interests of the medical profession. It is edited by Sanitatsrath Oldendorff, of Berlin, and published by George Thieme, of Leipsic.

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Diphtheria-antitoxin.—At the recent meeting of the American Pediatric Society at Hot Springs, Va., a resolution was adopted that the evidence thus far produced regarding the effects of diphtheria-antitoxin serum justifies its further and extensive trial.

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The Colorado State Medical Society will hold its next annual meeting at Denver, June 18, 19, and 20, 1895. An interesting and elaborate program has been prepared.

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The Tri-State Medical Society of Illinois, Iowa, and Missouri will meet at Des Moines, Iowa, October 1–4, 1895.

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Prof. E. Behring has succeeded Prof. Carl Fraenkel in the chair of hygiene at the University of Marburg.

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Professor Carl Ludwig, the distinguished physiologist, of Leipsic, died on April 24th.

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The American Medico-psychological Association will hold its next annual meeting at Denver, Col., June 11th–15th.

BOOKS AND PAMPHLETS RECEIVED.

Thirteenth Annual Report of the Associated Charities of the District of Columbia for the year ending November, 1894. Washington, D. C.: Judd & Detweiler, 1894.

Ueber Temperaturdifferenzen beider Körperhälften in Folge von bestimmten Verletzungen des Gehirns. Von Prof. Dr. M. Schüller. Separatabdruck aus dem Aerztlichen Central-Anzeiger, Wien, 1894.

Ligature of the Spermatic Cord in the Treatment of Hypertrophy of the Prostate Gland. By J. Ewing Mears, M.D. Pamphlet, 1894.

Caries of the Spine followed by Compression of the Cord. By J. T. Eskridge, M.D. Reprinted from the New York Medical Journal, 1894.

A Remarkable Case of Suppurative Otitis with Hemiplegia. By Arthur H. Coe, M.D. Reprinted from the Medical Sentinel, 1894.

Rest in Bed as a Resource in the Treatment of Chronic Nonsuppurative Catarrh of the Middle Ear. By A. Britton Deynard, M.D. Reprinted from the Post-Graduate.

Monocular Neuro-retinitis, with Cases. By B. L. Millikin, M.D. Reprinted from the Western Reserve Medical Journal, 1894.

The Medical Society of the District of Columbia in 1894, with some Important Recommendations. Annual Address of the President, delivered by Samuel C. Busey, December 19, 1894. Washington: Gibson Bros., 1894.

The Nature and Treatment of Leprosy. By R. H. L. Bibb. M.D. Reprinted from the American Journal of the Medical Sciences, 1894.

Atheroma. By W. Ainslie Hollis, M.D. (Cantab.), F.R.C.P. (Lond.). Reprinted from the Journal of Pathology and Bacteriology, 1894.

Gynecology in Bagdad. By John C. Sundberg, M.D. Reprinted from the American Gynecological and Obstetrical Journal, 1894.

Annual Report of W. A. Gordon, M.D., County Physician of Winnebago County, Wis. Oshkosh, Wis.: The Hicks Printing Co.

The Treatment of Corneal Ulcer by the General Practitioner. By S. Lewis Ziegler, M.D. Reprinted from the New York Medical Journal, 1894.

Tuberculosis of the Fallopian Tubes. By Charles B. Penrose, M.D., and H. D. Beyea, M.D. Reprinted from the American Journal of the Medical Sciences, 1894.

The Work of the Gynecological Clinic of the Hospital of the University of Pennsylvania, 1893–1894. By Charles B. Penrose, M.D. Reprinted from the University Medical Magazine, 1894.

A Case of Foreign Body (Gold Coin) Engaged in the Ventricles of the Larynx. By A. W. de Roaldes, M.D. Reprinted from the New York Medical Journal, 1894.

Bromid of Ethyl as an Anesthetic in Oto-laryngological Practice. By A. W. de Roaldes, M.D. Pamphlet. New Orleans, 1894.

United States Bureau of Education, Circular of Information. No. 1, 1894. Contributions to American Educational History. Edited by Herbert B. Adams. No. 18. History of Higher Education in Rhode Island. By William Howe Tolman, Ph.D. Washington: Government Printing Office, 1894.

A Case of Compound Follicular Odontoma Invading the Right Antrum of Highmore and Obstructing the Corresponding Nasal Fossa. By A. W. de Roaldes, M.D. Reprinted from the New York Medical Journal, 1894.

Fourth Report of the State Board of Health of Colorado; Including the Reports for the Years 1892, '93, and '94. Denver: The Smith-Brooks Printing Co., 1894.

Intestinal Anastomosis, with the Report of a Case. By Frederick Holme Wiggin, M.D. Reprinted from the New York Medical Journal, 1894.

The Prevention of Epidemics and the Construction and Management of Isolation Hospitals. By Roger McNeill, M.D. Edin., D.P.H. Camb. With illustrations. Philadelphia: P. Blakiston, Son & Co., 1895.

A Manual of Organic Materia Medica and Pharmacognosy. An Introduction to the Study of the Vegetable Kingdom and the, Vegetable and Animal Drugs. By Lucius E. Sayre. With 543 illustrations. Philadelphia: P. Blakiston, Son & Co., 1895.

The Parasites of the Skin. By J. Abbott Cantrell, M.D. Reprinted from the American Lancet, 1894.

Consumption: Its Causes and Treatment. By J. P. Koonse, M.D. Reprinted from the American Therapist, 1894.

Operative Treatment of Myofibroma Uteri. By N. Senn, M.D., Ph.D., LL.D. Reprinted from the Chicago Medical Recorder, 1894.

Notes on a Few Clinical Experiences of Inherited Syphilis. Seborrhea. By Burnside Foster, M.D. Reprinted from the Northwestern Lancet, 1894.

Removal of the Head of the Femur for the Lesser Sciatic Notch. By B. Merrill Ricketts, M.D. Reprinted from the Times and Register, 1894.

The Removal by Trephining of Fluid as the Result of Acute Cerebral Meningitis, with Report of a Case. By B. Merrill Ricketts, M.D. Reprinted from the Times and Register, 1894.

THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

Vol. LXVI. Saturday, June 15, 1895. No. 24.

ORIGINAL ARTICLE.

FOUR TYPICAL CASES OF MELANCHOLIA.

Melancholia with Imperative Suicidal Impulses; Melancholia Attonita; Melancholia Agitata; Melancholia with Stupor.

By First-Lieut. CHARLES F. KIEFFER,
OF FORT BUFORD, N. DAK.,
ASSISTANT-SURGEON UNITED STATES ARMY.

The following cases represent the chief varieties of melancholia. The division into the types mentioned is an arbitrary one, as indeed is the classification of insanity in general. It is believed to be the simplest and best. It follows the degree of mental depression more than any other feature. It is not my intention to enter into the questions of etiology or pathology. I simply wish to record an accurate "history" of the cases. These types shade into each other, and cases of one type frequently change their characteristics to those of another. I have tried to avoid much of the obscurity attending minute subdivisions, such as the melancholia religiosa of the Germans and the many forms of suicidal and homicidal melancholia. Any of these types may be associated with destructive tendencies to patients themselves or other persons. These cases do not come into the border-lines on the one side of simple emotional depression and analogous states, such as nostalgia and hypochondria, nor on the other of maniacal excitement. The patients all have the one essential character of "passive suffering, of being controlled and overpowered," and the hallucinations and delusions all have the impress of painful emotional perversion.

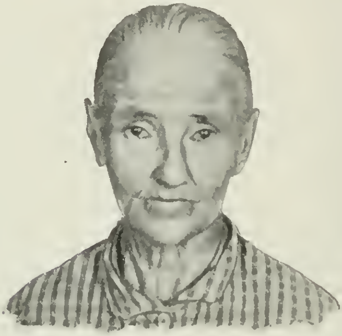
Case I. *Melancholia with imperative suicidal impulses.*—J. S. F., white, sixty-six years of age, a native of Wales, married; is a housekeeper by occupation. The woman is of medium size, the shoulders are stooped, the head of good size and shape, the hair white, the face round, but showing her years. The eyes are dark; there are no iridomotor anomalies; there is marked arcus senilis in both eyes; the tongue is coated and tremulous; the teeth poor and loose from recession of the gums; the ears are large, the hearing normal; the chest is hyper-resonant anteriorly; the breath-sounds roughened, and expiration is slightly prolonged; the second sound of the heart has the accentuated interval between the sounds marked. The circulation is sluggish; the hands and feet cold, and the skin mottled. The abdominal organs show no signs of disease. The legs are not deformed, though the right ankle is enlarged from a Pott's fracture, the result of an attempt at suicide by jumping from a window. The joint is still stiff, and walking is painful. The reflexes are increased; sensation seems diminished.

The history is, in brief, that after a short period of great depression, during which time she was mute, she attempted suicide by jumping from a window. She had had severe pain in her head for almost three years, and commenced to fear that her mind was becoming affected. She asked her sons to send her to an insane asylum, thinking that there something could be done for her. At that time she says her memory was good, but now she thinks she has lost it entirely. Her attention is sustained, and she is coherent. Her expression is sad and downcast. Three months later she attempted suicide by opening a vein in her arm with a table-knife. The hemorrhage was quite considerable. She was discovered when already unconscious, and the bleeding was checked.

Two months later she attempted suicide by taking "Rough on Rats," but was again saved. She was now closely watched, but one month afterward she tried to kill herself by eating a lot of pins. It is not known how many pins she swallowed, but she passed them in her stools for several days. She seemed to suffer no especial pain from this attempt, and certainly had no serious symptoms.

The woman is voluble and anxious to tell all her troubles. Her manner is respectful, and her attention is only fairly well sustained. She says she is very stupid and useless, and that is why she worries. Her memory has left her of late, and she feels so stupid that she cannot tell whether her arms are clean or not. She is worried because she cannot take care of herself, although really she is very neat and clean. She has no decided delusions of persecution, but thinks some people may have put "a spell" on her. She has no hypnagogic delusions. She says there is no further use in trying to commit suicide, because she cannot accomplish it. She is too stupid even for that. She knows it is wrong to try to kill herself, and usually does not have any such thoughts. At times, however, she says it all comes over her so powerfully that she is driven to it, and cannot resist the impulse. It was in consequence of such imperative impulses that she tried to commit suicide. She is sure she is crazy. She knows it, because she has noticed how her memory is failing, and how stupid she is becoming. So stupid she says she is that she is not competent to take care of herself or even keep herself clean. She says that when she first began to believe that she was crazy she was quiet, and did not wish to talk to anybody. She locked herself up in her house because it was dirty, and she was too stupid to keep the house clean, and she did not want the neighbors to see it. Sometimes she did not think it was so very dirty, but then she was too stupid to know. She is glad to see her friends, but is greatly troubled because she has lost all love for her sons. This distresses her greatly. She knows she should love them, but when they come to see her she feels like a tiger, and could kill them. She knows she should not treat them so, but cannot help herself, and worries greatly in consequence. She says they have always been dutiful sons and good to her. She asks most appealingly for medicine to help her, and she wants to know whether she can ever be well again, and smiles sadly when told she is improving. The photograph herewith reproduced (Fig. 1) is a good one of her attitude and expression, and also makes a good picture of the general type of depressed mental conditions. Her condition has remained stationary.

Fig. 1.

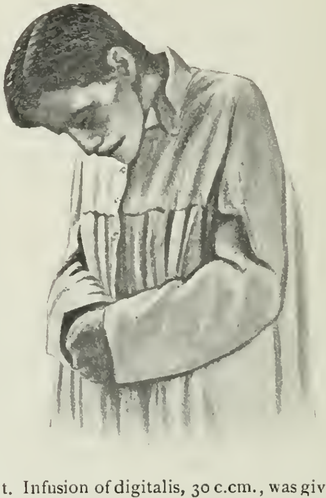


Case II. *Melancholia attonita.*—C. B., thirty-three years old, white, married, a native of Germany, by occupation a domestic, first came under my observation in 1892. Her history previously to that time is embodied in this report. She is of medium height, fairly well nourished, the skin, hair, and eyes dark. There is enlargement of the thyroid gland, slight upon the right side and well-marked on the left. The left shoulder is drawn up, the right depressed; there is a well-marked depression in the supra-clavicular and infra-clavicular spaces. Both saphenæ in both legs are varicose. The patellar reflexes are slightly exaggerated; there is no ankle-clonus. The viscera are normal, the ears and hearing normal, the pupils equal, and respond to light and in accommodation. The cranium is of good shape. The cranial measurements are as follows: Occipito-frontal circumference, 55 cm.; vertico-mental circumference, 57.25 cm.; Binauricular semi-circumference, 32.50 cm.

The family history, so far as mental disease is concerned, is negative. Her father and mother both died of pulmonary tuberculosis. The woman's previous history is that eight months previously she consulted a fortune-teller, and that immediately after she became profoundly depressed. She was incoherent, and would wring her hands as if in great distress. Her delusions were of a religious nature, and on several occasions she became violent. Shortly after this she became very quiet, and would not speak of her troubles. In consequence very little of any importance bearing on her mental condition could be gleaned from her. She complained of headache, was losing flesh, and was in constant dread of robbers.

On admission she was very reticent. She seemed to know where she was going, and came into the ward with great reluctance. She refused to eat, but was finally induced to take a cup of milk. She was quite docile. She speaks only in German, but understands what is said to her. She gave no indications of violence, and assisted in dressing and undressing herself. Within a few days she refused the liquid food, which had been given her under strong pressure. She asked for water, and when it was given her she said it was poisoned. She also said there was chloroform in her milk. Since that time she has been absolutely mute, refuses food, is irritable, and refuses every attention. On April 5th examination of her urine showed a specific gravity of 1018, with albumin, but no casts present. The total amount was 590 c.cm. Mechanical feeding was now begun. She resisted feeding at first, but afterward became apathetic in that respect also. On July 27th she had developed considerable palpebral and pretibial edema. The urine decreased in amount, and a small quantity of albumin was present. Infusion of digitalis, 30 c.cm., was given hot with her food. On August 22d pelvic examination was made under complete anesthesia. The heart was feeble at first, but improved with the ether. There were no lesions of the vulva or perineum. There was an extensive laceration of the cervix,

Fig. 2.



extending to the vaginal vault on the right side. The uterus was low, retroverted, and pulled to the right. The right ovary seemed increased, and the left apparently normal in size. The abdominal veins were distended. She was still being fed twice daily. Her manner and expression were pitiful in the extreme. She would stand many hours without the least motion, her chin resting on her sternum. In consequence of the constant retention of this attitude her nucha is permanently stretched. She is absolutely mute, and when moved about she cries quietly. She will not notice her husband or child when they visit her, but is mute even to them. (Fig. 2.) She is not in a condition of stupor, but of profound depression. Her special senses are acute, and she attends to many of her little wants.

This woman eventually recovered, and up to the present writing has not relapsed. The cure seems due to the effect of the digitalis. Its diuretic action was marked, and with increase of urine her mental condition began to clear up. She began by speaking to her little girl once or twice, and later, after nine months' use of the feeding-tube, she began to eat. After this her return to health was slow but constant. She left entirely well, and went to her duties with her husband and child. After her recovery she was very reticent about her past mental state, but she spoke to one of the nurses of delusions and hallucinations horrible in the extreme. The duration of the disease was about twenty months.

The most remarkable feature about this case, apart from the recovery after so severe an attack of mental disease, is the length of time of artificial feeding. For nine months, the longest time within my experience, every particle of food or drink was fed through the tube. The tube was inserted through the nostril and passed well into the stomach. She was fed twice daily, and received at each feeding but one-and-one-half pints of milk and three eggs. The milk was heated to a proper temperature, and the eggs previously beaten up with it. On this diet the patient retained her nourishment, and suffered no digestive disturbance. She passed through a severe endemic of dysentery in the house without being affected.

Case III. *Melancholia agitata, with delusions of double personality.*—M. C., thirty-five years of age, born in Illinois, single, a domestic by occupation, is of average height, well formed and well nourished. The pupils are regular, and respond to light and in accommodation. The tongue is smooth and pale. She bears no scars or marks of disease or violence. Her pulse is full and regular, and its rate slow. The thorax and abdomen are normal. The patellar reflexes were not well taken.

There is no history of a tuberculous or carcinomatous taint in her family. None of her relatives has been insane, and there is no history of a neurotic tendency. The present illness began a year-and-a-half ago with hallucinations of sound. No cause was assigned as exciting them, and her physical health is said to have been good. She was in great fear of murderers, from whom she would hide in closets, or run screaming to the street. She also thought she was blamed for killing her cousin. She was wakeful from the noise of the voices that she heard constantly about her accusing her of great sins. Lately they threatened to kill her, as they had already killed her mother and brother. At this time her manner was quiet, self-absorbed, and she was extremely depressed. Once during the last six months she took off her clothes. This was in obedience to voices she heard saying she was to be killed, and that she should prepare herself for it. She was very much ashamed that she had undressed herself. The hallucinations of sound were constant. Her physical condition remained good.

This condition persisted for eighteen months, when she rather suddenly developed the agitated form of melancholia. Since this time she has been in that condition, now about six months. Her emotional excitement and terror seem to be excessive, and her agitation is extreme. She paces the floor, wringing her hands and weeping, tears her hair, and often becomes incoherent. Her delusions and hallucinations are fixed and constant. Her attention is not sustained, and when questioned she constantly interrupts her story to talk to the ever-present voices. She says this is a place of punishment for her, and that she is put here for the terrible crimes she has committed. She must stay here until these are expiated and her enemies are satisfied. She has most painful and harrowing unsystematized delusions of persecution. Her memory for both recent and remote events, but more especially the former, is very much impaired. Her manner has changed, and from being a quiet, well-spoken woman, she has become exceedingly profane.

She has a well-marked delusion of double personality. She conceives herself as being two beings, and it is the privilege of the one continually to reprove and lecture the other. She carries on lengthy arguments with herself, and often comes to blows with herself over them. She tells her tale to her other self, and expects from this other a full measure of sympathy. The greatest reproach one personality can bestow on the other is to call it "crazy." Sometimes she carries on both sides of the conversation, and again she only enunciates one side of it, and the whole sounds like the half of a telephone conversation. She ended the examination rather abruptly. She became very much excited, and then followed this monologue:

"Mary, by God, you are a fool."

"I know it," sullenly.

"Mary, by God, if I were you I would not tell him any more."

"I won't," then turning to me, the second person being represented, she sullenly said—

"I won't tell you a damned thing more."

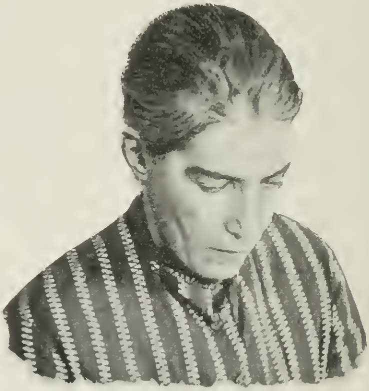
Case IV. *Melancholia with stupor.*—A. D., forty years of age, white, a native of Ireland, married, a domestic by occupation, has had one child, which was stillborn after a hard labor and by instrumental delivery. The woman is tall and intelligent-looking, has black hair, streaked with gray, gray eyes, the head of round type, and well-proportioned. The head-measurements are as follows:

Occipito-frontal circumference, 55.75 cm.; vertico-mental circumference, 61 cm.; binauricular semi-circumference, 38.25 cm. The attention is not well sustained on account of her constant fright. Her movements are co-ordinate, and the gestures appropriate. Her heart and lungs are normal. There is a fine fibrillary tremor of the lips, tongue, and fingers. There are no irido-motor anomalies; the pupils are equal, and respond to light and in accommodation. The patellar reflexes are spastic. Three brothers of this patient died as dements. The immediate cause of death in two of them was the progressive physical deterioration attending the disease, "marasmus." The third died of pulmonary tuberculosis, and another brother also died of the same disease. There is said to be no insanity in the generation immediately preceding, but a marked neuropathic tendency in the second generation back, in which there were epilepsy and insanity. The duration of this woman's insanity has been two years.

The patient was brought in very much excited, and apparently in abject terror, begging the nurse not to lock her up. She had a crucifix in her hand, to which she clung desperately. At first, in her extreme agitation, she would allow of no physical examination. In a little while she quieted down. At this stage of the examination her memory seems fairly good. Her attention is not well sustained on account of the constant fright. She herself dates her trouble from many years back, when, she says, she was drugged while living out at service. She implies rather than says that she was drugged for evil purposes by some men. Since that time, she says, she has been constantly pursued by them. They follow her wherever she goes and completely terrorize her. She does not attempt to systematize her delusions, and can give no reasons why she is afraid of them, since they have never harmed her, but she answers all questions with, "Oh, I am afraid." She was constantly afraid these men would come in at night. At intervals in the examination she became extremely agitated, and begged most pitifully not to let the men hurt her. At such times she gasps, and makes convulsive clutches over the precordial region, and her heart beats rapidly and tumultuously with intermitting rhythm. This "precordial fright" (Spitzka) seems to be a constant accompaniment of her paroxysms of terror, and is severe. She says her enemies are many men, but cannot tell whether they are the same men, because she never looks at them. She is afraid they will kill her. When questioned about the drugging she gives no reason for it, and again implies an evil motive. She says that she was only drugged once that she "knows of." She constantly kept her husband with her for fear that he would be arrested; she also feared that some vague, ill-defined harm was coming to him. She convulsively clutches her crucifix and keeps it constantly with her, as she thinks it will protect her from her foes. She says she does not sleep well on account of the men. The last few nights she has been in constant terror; has been awake all night. She saw the men, and heard them talking outside her room.

In the six months following this first observation her condition changed considerably. Her agitation gave way to stupor. She would sit around day after day in an apparently dazed condition. (Fig. 3.) She seemed almost to be living in another sphere, and to be almost completely unconscious of her surroundings. She would not move unless driven by the most urgent physical necessity. She is failing both physically and mentally. The tremor has become coarser and more pronounced. All her special senses seem blunted, and at times almost suspended. She is not absolutely mute, and from the little that can be gleaned from her it is quite apparent that her memory, especially for recent events, has become markedly enfeebled. Although failing bodily, careful examination reveals no disease of heart, lungs, or kidneys. Her handwriting shows the effect of the tremor of her fingers.

Fig 3.



I saw this patient again one year later. At this time she was greatly emaciated and bedridden. She had then well-marked pulmonary tuberculosis. Both apices were consolidated, and there was a small cavity in the upper part of the right lung. She was unconscious most of the time, and when not so complained greatly of headache. For three weeks she had been subject to cataleptic manifestations, and for three days at the time I saw her she continued in this condition. The muscles were of waxy or "lead-pipe" rigidity, and any position was maintained for hours. She had deteriorated to a marked degree, and was then far advanced in terminal dementia. She died a few weeks later. No autopsy was held. The duration of the disease was three years and seven months.

The Medico-Legal Society of Chicago.—At the annual meeting held June 1, 1895, the following officers for the current year were elected: President, Edmund J. Doering; Vice-Presidents, Cassius D. Wescott and Sanger Brown; Treasurer, Joseph Matteson; Secretary, John Ridlon.

CLINICAL MEMORANDA.

SUCCESSFUL TREATMENT OF A LARGE CIRSOID ANEURISM OF THE SCALP.

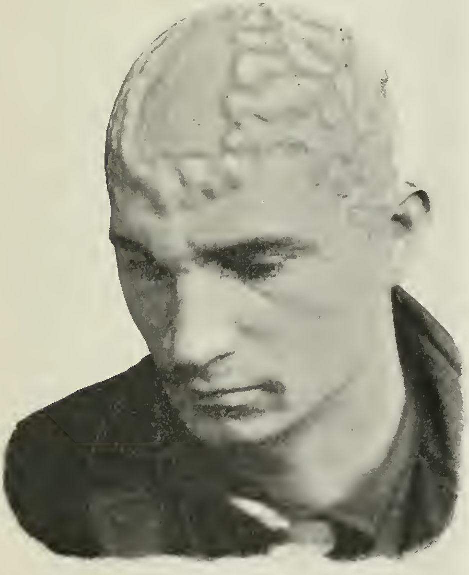
BY W. S. FORBES, M.D.,
OF PHILADELPHIA;
PROFESSOR OF ANATOMY IN JEFFERSON MEDICAL COLLEGE, AND CLINICAL SURGEON TO THE JEFFERSON MEDICAL COLLEGE HOSPITAL.

M. J. T., aged twenty-two years, a carter, entered the Jefferson Medical College Hospital during my term of service, on January 8, 1894. His family history is good; his father and mother are living and in good health, and he has brothers and sisters in good health. His grandfather and grandmother on both sides lived in fair health to beyond eighty years. There is no history of tubercle, of insanity, or of venereal taint.

When thirteen years of age and in good health the boy was struck on the head violently with a "rattan." The blow caused him to stagger. The skin was not torn. A large lump appeared in a few moments. There was considerable pain, which continued for a month, and was increased on handling. The tumor at times contracted somewhat and would then expand. When sixteen years of age he noticed the frontal veins were enlarging, and soon after this the veins on each side of his head and behind began to enlarge and become tortuous, and the expanding tumor began to throb.

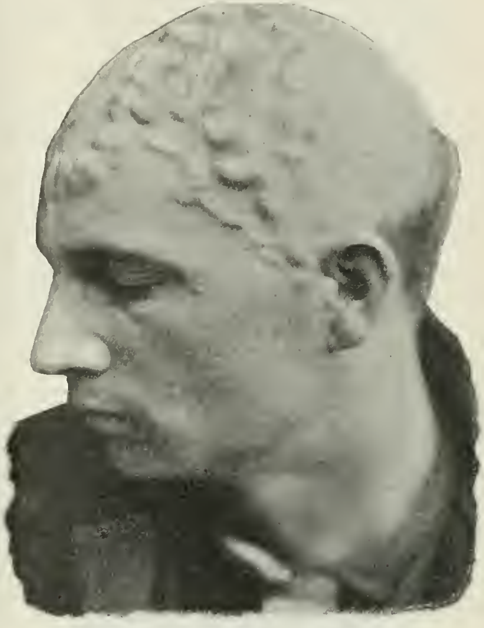
His family states that at this period, three years after the blow on his head, his temper at times was easily aroused and would become violent and beyond control. He became vicious. It is to be noticed that he never drank any intoxicating liquor. Four months before entering Jefferson Medical College Hospital, that is, early in September, he fell from his cart and struck his chin, which rendered him insensible for a few moments, but he soon recovered and continued his work. In October he got married, and in two weeks afterward he became violently insane, with homicidal tendencies. He was then taken to the Insane Department of the Philadelphia Hospital, where he remained for five weeks, when he was discharged as improved in his mental condition. He had no recollection of having been taken to the hospital, but in ten days he realized where he was. He had gonorrhea one year ago, but he is now well. He has no glandular enlargement. He has no headache, but has frequent attacks of vertigo. He complains of loss of memory and mental dulness at times. He has constant pain all over his scalp, which is increased on handling it during examination. His appetite is good. He says he is constipated; otherwise his general health is fair.

FIG. 1.



January 1, 1894, two days before operation.

FIG. 2.



January 1, 1894, two days before operation.

He has external strabismus in the right eye. The ophthalmoscope discovered large patches of central retino-choroiditis of the right eye and partial atrophy of both optic nerves, but most marked in the right eye.

Examination of his heart showed an accentuated second sound, a thrill near the apex, and diastolic shock, but no aortic or mitral murmur.

The man was put to bed; his constipation, his skin, and his diet attended to, and the hair removed from the entire scalp. Photographs 1 and 2 were taken at this time.

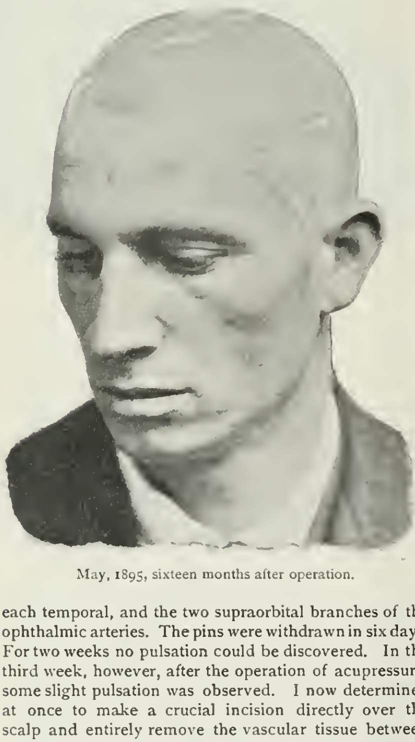
There was a large pulsating tumor, somewhat flattened and more than two inches in diameter, extending from the middle of the interparietal suture backward to near the occipital crest. It was the spot where the end of the rattan had struck him.

Radiating from the tumor were large veins extending backward, forward, and into either temporal region. They were prominent, tortuous, and pulsating near the tumor. There was a decided bruit in the tumor. The veins and the tumor could be obliterated by gentle pressure applied to the entire scalp.

There were eight arteries supplying the tumor, and by pressure on all of them at the same time there was no pulsation, the bruit could not be heard, and the tumor and the veins became at once less prominent.

The control of the blood-supply was successfully made by acupressure-pins applied to the external terminal branches of the occipital arteries, the terminal branches of each temporal, and the two supraorbital branches of the ophthalmic arteries. The pins were withdrawn in six days. For two weeks no pulsation could be discovered. In the third week, however, after the operation of acupressure, some slight pulsation was observed. I now determined at once to make a crucial incision directly over the scalp and entirely remove the vascular tissue between the skin and the periosteum of the flat bones. Accordingly pressure was made on the several arterial trunks, and the incision made over a large plane of vascular plexus. There was considerable hemorrhage, but this was well controlled by forceps and animal ligatures. The margins of the flap were brought together, proper compression was applied, and over all a wad of sterilized gauze was held in place by a bandage. The man made a complete recovery and has been in perfect health ever since. Photographs Nos. 1 and 2 were taken two days before the operation, and No. 3 was taken sixteen months after the operation.

FIG 3



May, 1895, sixteen months after operation.

I am indebted to my assistant, Dr. Hewson, for the notes of the case, and to Prof. Hansell for the ophthalmoscopic observations.

INSUFFLATION OF SODIUM CHLORID INTO THE NASAL CAVITY FOR RELIEF OF PAIN.

By WILLIAM M. CAPP, M.D.,
OF PHILADELPHIA.

By the insufflation of sodium chlorid has been accomplished the entire and immediate relief of acute pain in the face and head in a short series of cases that it may be useful to report. The procedure is simple, harmless, and no more annoying than would be a pinch of snuff, and the medicament is commonly at hand; the effects have been very satisfactory.

In five cases of faceache from decayed teeth, in which the pain did not yield to the usual domestic applications, the pain disappeared at once upon the contact of pulverized table-salt with the mucous membrane of the nose, blown from an insufflator. There were no notable characteristics; the cases were simply such as are daily met among those who do not take proper care of the teeth. The patients were of adult years, two of them men and three of them women.

Another case was that of a woman in middle life, a cook by occupation, always having had general good health, and being strong and hearty of frame. Her face was much swollen and painful, and her condition was pitiable, the suffering having deprived her of food, sleep, and rest for three days and nights. Such was her story, and she appeared to be unstrung, nervous, and quite unfitted to attend to her work. Evidently "a cold" had been taken that painfully affected the nerves of the face. An examination disclosed the presence ot six neglected and decayed teeth, sadly needing the dentist's attention. They could not, however, have been filled in the condition of her mouth and face at that time. The insufflation startled her by its unexpected sensation, and her aspect for the moment was one of pain and bewilderment. She was directed to walk across the room, which at once recalled her to her surroundings. She said that the treatment had not given pain, but had taken her by sudden surprise, which passed off, and with it all pain had left her. Upon going home she ate a hearty meal, and after a few hours went to bed and slept all night. Having occasion to be at the house in which she lived, I saw her almost daily for a week afterward, and the pain at no time returned, and the swelling and sensitiveness subsided without other treatment.

In a number of cases of severe headache without regard to cause, relief has been satisfactory and immediate upon the application of this remedy; also in two cases of earache that did not present indications for other special treatment.

A young lady with a furuncle in the external auditory canal presented herself, suffering great pain, with the distress and disturbed nervous condition that usually accompany this painful malady. In the fraction of a minute after the insufflation there was complete relief from pain, and the temporary discomfort from the application, which was attended with great suffusion of the eyes and nose, was deemed trifling by the patient as compared with the complete relief from pain that had before been suffered. There was entire freedom from pain for about four hours, after which it returned, but in much less degree. Subsequent appropriate treatment for the disorder aided in complete recovery, which was reached without any return of the distress endured previous to the salt-insufflation. Some weeks later this same patient applied for relief from the pain caused by the irruption of a wisdom-tooth, which had made her sick and miserable day and night. She elected to submit to the same treatment as before, which was administered, and gave the same prompt and happy result. She slept well that night, and had no return of the pain.

A similar treatment was given to a woman who complained of intense pain in the top of the head. The case was not taken up critically, as at the time temporary relief only was sought, but a partially developed history seemed to point to uterine disease. Immediate relief followed the insufflation of the salt, and comfort, complete and satisfactory, was secured for many hours. Subsequent inquiry showed that when the pain returned it was in much less degree, and other treatment applied to the cause of the trouble removed it. This patient was one who some months before had been promptly relieved of a distressing faceache from a decayed tooth, as previously noted, and did not hesitate to have the treatment repeated upon her.

A fellow-physician during a chance conversation complained of disabling discomfort from eye-strain from over-use of the eyes in reading and work with the microscope. Upon recounting to him some of the foregoing cases he asked to have an application of the treatment, which was accordingly given. His testimony confirmed that of the patients before related. He said that the headache and painful feeling of strain of the eyes immediately left him, and the shock of surprise at the contact of the salt with the nasal mucous membrane, though not painful, was not pleasant, though probably not more so than insufflation of other powder to one not accustomed to it.

In all cases from two to four grains of finely ground table-salt were used in a glass nose-insufflator, with a short rubber tube attached with which to blow by the mouth the medicament into the nasal cavity. The charge is blown just after the patient has emitted the air from the lungs in respiration. In the case of the physician referred to, the insufflator not being at hand, a tube of paper was improvised, and served the purpose equally well. It is worthy of notice that with the exception of the physician none of the patients knew the nature of the material which was applied.

Originality in the use of this mode of treatment is not claimed by me. The first account of its application, so far as I know, is related in the *Edinburgh Medical Journal* for January, 1890, by Mr. George Leslie, as occurring in his own practice. He made a successful use of it in the treatment of obstinate, long-standing, and recent cases of neuralgia, headache, faceache, earache, and toothache, and in bronchial asthma; and recounts that in many cases relief was permanent. The present note of experience is confirmatory of his paper upon the subject. The procedure would seem to offer a quick relief from pain in a class of cases that profoundly appeal to sympathy, but often baffle the best skill.

MEDICAL PROGRESS.

The Detection of Tubercle-bacilli in Sputum.—AMANN (*Centralblatt für Bakteriologie und Parasitenkunde*, Band xvii, No. 15, p. 513) details the methods for the detection of tubercle-bacilli in sputum that he has come to prefer as the outcome of an experience of twelve years. The sputum is first poured into a strong glass cylinder having a capacity of 100 c.cm., and diluted with from two to four volumes of cold distilled water, so that the cylinder is about half filled. Then 1 c.cm. of chloroform and a small quantity of perfectly clean shot of moderate size are added. The cylinder is tightly closed and actively and continuously shaken for several minutes. In this way the sputum is converted into a perfectly homogeneous solution. It is now further diluted with from four to six volumes of distilled water, and is poured into a specially constructed U-shaped glass cylinder (20 cm. high and 20 mm. in diameter) for the purpose of sedimentation. The caliber of this tube grows progressively smaller, so that it is but 2 mm. at the bottom. To the sputum-solution are added 2 c.cm. of carbol-fuchsin solution, and the two are quickly intermixed by gentle shaking. The apparatus is then closed by means of a rubber stopper perforated through the middle, through which passes a hard-rubber or bone tube. The process of sedimentation is permitted to continue for two days, although sometimes twenty-four hours suffice. The sediment is received into a watch-glass or other receptacle, and a portion is used for a study of epithelium, fibers, and the like, while a second portion is used for the study of tubercle-bacilli. The collected sediment is spread in a thin layer upon several glass slides which are dried at the ordinary temperature, when they are fixed either by careful heating or exposure to equal parts of absolute alcohol and ether. The preparation is now stained with carbol-fuchsin (1 gm. fuchsin is well rubbed up with 5 gm. of liquid carbolic acid (90 per cent.), and 95 c.cm. of hot distilled water added). Of this solution several drops are placed upon a clean side and heated until the vapor of steam arises. Upon this slide is placed the prepared slide, and the exposure continued until the fluid has cooled. Decolorization is effected by exposure for from half a minute to one minute to a 20 per cent. solution of sulphuric acid saturated with picric acid. The preparation is now washed in water until its acid reaction disappears. It is next treated with a solution of fluorescin 15 gm., crystallized methylene-blue 15 gm., and absolute alcohol 500 c.cm. After the red color has disappeared the preparation is washed with absolute alcohol and then in water. As a counter-stain a diluted watery solution of malachite-green may be employed, to which the preparation is exposed for about a minute, and then washed in water. The slide is now dried and may be studied, or if it is to be preserved, it may be covered with dammar or balsam and a cover-glass.

Floating Spleen in an Infant following Malaria.—PROBEN (*American Journal of Obstetrics and Diseases of Women and Children*, May, 1895, p. 629) has reported the case of an infant admitted to a foundling-asylum when two weeks old, without any previous history. The child was nursed by a woman who also nursed her own child. The latter thrived well, while the former declined to the ninth month, when it was small, puny, cross, and irritable. At this time the child was given to a hardy, active, strong woman to nurse, whose baby had recently died. This woman had well-developed mammary glands, and an ample supply of milk of good quality, with a good percentage of cream and a fair specific gravity. The child nevertheless failed to improve. Upon physical examination, in addition to symptoms of rachitis, marked local enlargement of the left side was found, which produced a bulging of the abdominal walls anteriorly and laterally, and also of the ribs. Over this swelling the percussion-note was flat throughout an area extending upward as far as the eighth rib, and downward toward Poupart's ligament and toward the median line. On palpation a hard mass could be found extending up below the ribs, and downward into the pelvis behind Poupart's ligament. In the median line a hard distinct edge was felt, notched here and there. There was no pain or tenderness, even with counterpressure in the lumbar region. The mass was movable, and could be rotated slightly for a few inches, though quickly assuming its former position. The liver was slightly enlarged and distinctly palpable at its lower edge, about two or three fingers' breadth below the ribs. Examination of the blood on different occasions disclosed the presence of pigment-bodies, roset-shaped translucent masses, and crescent-shaped bodies. In accordance with these findings six grains of quinin sulphate were given three times a day, alternating with fair-sized doses of arsenic.

The child bore the treatment well. Slight fever that was present soon subsided, while the other symptoms vanished, and the child improved in appearance and weight. The spleen diminished in size correspondingly, although an oval mass of characteristic outline remained, with a distinct hard edge, not notched, convex on its surface, not tender or painful, lying loose in the abdominal cavity to the left of the umbilicus, partly in the lumbar and inguinal regions. The viscus could be gathered up between the fingers, and was freely movable to the left and upward for a distance of two or three inches. There was an absence of the flatness beneath the ribs in the lower axillary region, where the spleen is normally situated. The tumor was about double the size of the normal spleen, and owing to its weight had evidently loosened itself from its attachments, and was floating about the abdomen.

THERAPEUTIC NOTES.

The Treatment of Diphtheria with the Antitoxin.—GOUGUENHEIM (*Annales des Maladies de l'Oreille, du Larynx, du Nez et du Pharynx*, 1895, No. 5, p. 440) reports the results of the use of the antitoxin in the treatment of diphtheria at the Hospital Lariboisière. Prior to the institution of the new treatment, in October, 1894, there had been observed 135 cases of diphtheria in adults, with 14 deaths (10.37 per cent.), and 40 in children, with 23 deaths (57.5 per cent.). Of 77 adults treated with the antitoxin 3 died (3.9 per cent.), and of 48 children 9 died (18.75 per cent.). In 12 of the children, despite characteristic appearances, the bacillus of diphtheria was not found, but only streptococci. One of these children died after tracheotomy. In 10 cases only diphtheria-bacilli were found; 2 of these died. In 16 cases diphtheria-bacilli and streptococci were found in association; 1 of these died. In 1 case diphtheria-bacilli and colon-bacilli were found together. Five cases presented multiple associations. Of the whole number tracheotomy was performed in 4 cases, and of these 2 died. Among the cases of adults 12 presented only streptococci; 1 of these died after tracheotomy. Thirty presented diphtheria-bacilli, and only 1 of these died. In 33 diphtheria-bacilli and streptococci were associated; 1 of these died.

SIEGEL (*Münchener medicinische Wochenschrift*, 1895, No. 21, p. 507) relates that between 1889 and 1893 the mortality from diphtheria in the Olga Hospital, in Stuttgart, averaged 40.1 per cent., and among cases requiring tracheotomy 63.3 per cent. During the year 1894, up to October 4th, when the antitoxin was first employed, the mortality reached 50.3 per cent. and 70 per cent., respectively. In one-hundred cases treated from October 4, 1894, to January 1, 1895, with the antitoxin the mortality was 12 per cent. and 20.3 per cent., respectively.

The Treatment of Gall-stones with Large Doses of Olive-oil.—STEPHENSON (*British Medical Journal*, No. 1795, p. 1144) has reported the case of a woman, forty-eight years old, who presented herself in an attack of biliary colic. She was suffering from acute pain, situated over the hepatic region and extending to the right shoulder-blade, accompanied by severe retching and vomiting and collapse. The pain was relieved by hypodermic injections of morphin. The attack was followed by well-marked jaundice, which, however, passed off in a few days' time. There was a history of similar attacks at various intervals for upward of four years, and these were invariably followed by slight jaundice. The stools were examined for gall-stones, but none was found. Two months later the woman was again seized with a severe attack of colic, but careful search failed to detect any trace of gall-stones in the stools. These attacks continued, at intervals of from three to six weeks, for nearly five months, although the patient was constantly under treatment, and all the usual remedies were tried without avail. In no instance was a gall-stone ever found in the stools. The last attack was particularly severe and protracted, and cholecystotomy was advised. Before operating, however, resort was had to large doses of olive-oil. Accordingly, three grains of mercurial pill were given at bedtime, and followed on the next morning by three ounces of olive-oil, the patient being instructed to lie upon the right side. The oil was given in tablespoonful-doses every three hours during the day, and in the stools six large gall-stones were found. Two measured nearly half an inch and were facetted. No pain was experienced during the passage of the stones, nor did the oil cause much nausea. The jaundice passed off in a few days, and the patient made a complete recovery, for twelve months afterward having no attacks of colic.

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SATURDAY, JUNE 15, 1895.

THE DISEASES OF THE MYOCARDIUM.

WE recall with interest the lectures of PROFESSOR DA COSTA, delivered about a year ago, on the subject of weak heart, in which he detailed the etiologic relations and clinical features of certain cases of failing circulation due to disturbances of the heart's action. These studies did not deal with anatomic conditions, but rather with the results, the outward manifestations or symptomatic display in cases in which the underlying structural or vital disease could only be a matter of conjecture. DA COSTA would include among his cases instances in which there is muscular weakness and others in which the neural control is impaired. Other investigators have approached the study of cardiac pathology rather from the anatomic point of view, studying and describing the morbid lesions of the muscular and other parts of the heart. Sooner or later, no doubt, the exact relations of the structural changes to the clinical manifestations will be established and the knowledge of cardiac pathology will be placed upon a basis of scientific accuracy impossible at present. A retrospective view of the whole subject even now will indicate how great and rapid has been the accumulation of more exact knowledge, and in particular how conspicuously the myocardium has come to occupy attention.

The tendency of the day is toward the establishment of anatomic lesions in all cases of functional derangement; and such terms as weak muscle, idiopathic weakness, or the like are scrutinized with greater care and accepted with greater hesitation than was ever before the case. It is not impossible to conceive that a heart may be inherently weak and unequal to cope with extraordinary demands, whether arising from surrounding conditions acting mechanically or from disease; but we are slow to-day to admit such weakness until every possible form of organic disease has been excluded. The older investigators in particular were prone to speak of such inorganic myasthenia, but the regularity with which structural defects are found by modern methods of research has materially lessened the horizon of mere functional weakness, and will doubtless continue to do so more and more. It is particularly to the credit of KREHL and of ROMBERG that this is so. The necessity urged by these writers of making systematic sections of all parts of the heart is amply illustrated by the discovery of small and localized, yet doubtless important, lesions in cases in which a superficial examination would have failed to discover changes of any kind. It is scarcely necessary to call attention to the serious consequences that might result from a focal lesion in one of the papillary muscles or at the base of the valvular attachments, yet how easily might such a lesion be overlooked unless careful, systematic examination were made in every case.

The morbid changes themselves are widely varied, and but little definite knowledge can be claimed regarding their special results. In a general way, it may be asserted that myocardial degenerations or inflammations weaken the cardiac power; but pathologists have been heretofore so busied with the determination of the lesions themselves that little can be said regarding any variations in the effects of the different forms.

VIRCHOW headed the way for exact knowledge by his first descriptions of myocarditis, and, though more modern pathology recognizes in his "parenchymatous myocarditis" rather degeneration than an inflammation, his work in other respects still retains its original importance. The older writers had, it is true, spoken much of carditis, but little definite knowledge was established, and the term was so vaguely applied as to make it difficult at this day to determine what lesion was really observed or referred to in many cases. The more accurate studies of the parenchymatous degenerations date from the contributions of ZENKER. In a general way, it has since been recognized that granular and hyaline degenerations of the muscle-fibers are sometimes results of fever and infection, but it has remained for comparatively recent years to establish the frequency of these lesions, and especially the great number of infections liable to be so complicated. In other words, while it was recognized as a pathologic fact in various severe fevers that myocardial disease might arise, the frequency of this association was scarcely conceived, and its clinical importance was rarely taken into account. To-day it may be asserted that few cases of severe infectious disease run through their entire course without some degenerative or inflammatory disease of the myocardium. Not rarely this may profoundly influence the clinical course, and, more commonly, perhaps, than we yet suspect the subsequent health and vitality suffer deterioration. Other and rarer acute degenerations than those referred to have been described, but none of them appears to be of great clinical significance.

One form, however, merits notice from its striking character as well as from the attention devoted to it in recent years. This is the segmentation of the fibers first described by ZENKER, and more recently studied by RENAUT and LANDOUZY, who speak of it as *myocardite segmentaire*, and by RECKLINGHAUSEN and others. This has been found under a variety of circumstances, the most striking of which is sudden death, in which the peculiar fragmented state of the muscle-fibers (a solution of the cement-substance) not unnaturally suggested to some investigators the thought that the disorganization of the muscle played a part in the sudden fatal issue. RECKLINGHAUSEN, ZENKER, and recently OESTREICH and GUTTMANN, regard this change as purely agonal or post mortem, but others have asserted with apparent reason that its occurrence in some cases and its absence in others betoken a pre-existing vital or chemic weakness in the former cases, even were the view of its agonal occurrence sustained by positive proof. However this may be, the condition is one of greatest pathologic interest and adds another evidence of the complexity of cardiac pathology.

Of the more gradual and chronic degenerative conditions fatty heart has been long recognized, though confused with other conditions. With it may be associated interstitial fibroid myocarditis and various forms of vacuolation and atrophy of the muscle-fibers. The association of fatty degeneration of the heart with various cachectic conditions is well established; the conditions under which combined fibroid disease and fatty degeneration occur are less clearly defined. That cases of this character have been mistaken for simple hypertrophy of the heart was evidenced by QUAIN'S study of a much-enlarged heart at St. George's Hospital, which had been regarded as an instance of pure hypertrophy. It is needless to indicate the essentially different effects of these conditions upon the cardiac power. Every clinician of experience has doubtless seen cases of considerable enlargement of the heart, with evident failure of its power, either associated with arterio-sclerosis or without this, in which no amount of careful inquiry or investigation into the previous history or the state of the patient revealed an explanation of the cardiac disease. Very often these cases are put down as idiopathic hypertrophy and dilatation. Most of them, however, are not purely hypertrophy and dilatation; evidences, though slight, of interstitial myocardial change are found on systematic study of the heart, and the suggestion that some old-time and apparently trivial infection may have set on foot acute endocardial lesions, which eventually led to sclerotic changes, may be entertained. It must be the part of future investigation to determine how far such acute processes, themselves passing without marked symptoms, may operate to this final event, and how far such obscure lesions may account for the occurrence of what we are still accustomed and constrained to speak of as essential weakness of the heart, heart-strain, and the like.

Of equal interest with the study of the pathology of the heart's muscle in cases of purely muscular disease is the investigation of its *rôle* in valvular affections. Notwithstanding the fact that as old an observer as STOKES recognized and clearly indicated the great importance of a healthy muscle in valvular disease, and despite the fact that our treatment of cases has been based upon the stimulation of the heart-muscle, writers have ever dwelt with particular emphasis upon the mere mechanic problems. However much a valvular defect may mechanically contribute to circulatory disturbances, the infinitely more important questions are the ability of the heart-muscle to compensate for the valvular disorder and the exact character of the lesion or lesions capable of producing this loss of power. The studies directed to the heart-muscle in valvular disease are, therefore, all-important, but have hitherto been concerned with chronic cases only. Of late, however, and most particularly in a recent contribution of Romberg (*Deutsches Archiv für klin. Med.*, June 26, 1894), attention has been called to the lesions of the myocardium in acute myocarditis. It cannot fail to strike the observer that in instances of verrucose endocarditis, in which the local lesion seems so trivial, the failing circulation is often disproportionately marked. This has been ascribed to reflex nervous disturbance, to inflammatory irritation, or the like; but such explanations are scarcely satisfactory. We are interested, therefore, in the studies of Romberg, which appear to throw the first distinct light upon the real nature of the cardiac disturbance. His investigations, it is true, have been confined to but two or three cases, but the results were striking. In each there was found a certain degree of myocarditis, especially marked at the auriculo-ventricular junctions and at the bases of the valvular attachments, where but a moderate degree of disease will be seen to have the power of exciting most marked disturbance of the function of the organ. But, more important than this, was the discovery of hyaline thrombosis in a large number of the small arteries of the myocardium, a lesion that might conceivably be far-reaching in importance. The short duration of these cases doubtless prevented further results, but if these lesions are confirmed by other investigations there is found an explanation of what has always been a doubtful question in cardiac pathology.

The physiologic importance of the intra-cardiac nervous ganglia is still a matter of great question, and the significance of morbid changes discovered in them can scarcely be determined. A number of observers, as Putjakin and Ott, have described such lesions, occurring either alone or in association with grosser alterations of the myocardium; but, beyond the general suspicion that such lesions may occasion serious disturbance of the heart-action, nothing of a definite nature may be asserted.

We have thus hastily and imperfectly indicated some of the lines along which increasing knowledge has accumulated, and if there is much vagueness in what we have said, our justification is found both in the lack of knowledge and in the advantages of this feeling of vagueness itself. We would make ourselves perfectly clear on this point. So long as it was held and taught that cardiac pathology comprised certain definitely known valvular lesions, supposed to act in a mechanical way, and other cases in which a gross disease of the muscle itself deranged its action, and still others in which inherent muscular weakness or loss of nerve-control determined the loss of cardiac function, so long the wheels of progress were locked from the very definiteness of knowledge or theory. It has, however, very fortunately been the province of recent investigation to cast a deep shadow of doubt upon the proportion of importance to be ascribed to the mere mechanical effects in the first group and upon the essentially functional character of the cardiac weakness in the last. The less conservative investigators of recent years have tended more and more to a complete denial of such conditions as inherent muscular weakness, and to the assertion of the view that definite organic changes might be detected in every case in which systematic study had been made. While these latter claims have fallen far short of positive demonstration in many cases, they have served to render less positive the older beliefs, and have established a wholesome feeling of doubt regarding the entire question of myocardial disease, which has stimulated investigation and must continue to do so hereafter. The clinical recognition of the effects of sudden or prolonged heart-strain is very important, but it is vastly more important that it should be recognized that there may be, and probably are, underlying structural changes that predispose to untoward results of strain or result directly from it. It is in this direction that recent investigation regarding myocardial disease has been suggestive, and it is in this direction that further results are likely to be found.

EDITORIAL COMMENTS.

The Home-care of the Sick.—At the Third Annual Sanitary Convention of the State of California, recently held at San Francisco, Dr. S. O. L. Potter (*Pacific Medical Journal*, vol. xxxviii, No. 5, p. 265) made an earnest plea for suitable provision in the construction of the houses of the well-to-do for the care of members of the family stricken with disease and requiring isolation. As is aptly pointed out, rooms are set apart for reading, smoking, billiards, and other forms of entertainment, as well as for guests; but, as a rule, no thought is given as to the possibility of illness and the requirement of a special department for the invalid. Under existing circumstances, patients suffering with infectious diseases, and more especially those that are contagious, cannot receive that disposition and care in their own homes that is possible in a well-organized general or special hospital; but if suitable provision were made in the construction of dwellings, the risks and unpleasantness of removal to a hospital in cases of this character would often be avoided. As Dr. Potter states, such a sick-room or suite of rooms should ordinarily be located on an upper floor, suitably warmed, and, if possible, in the southeast corner, so as to obtain the best sunny exposure. It should be separated from other rooms on the same floor by halls with windows at either end. The floor should be covered with matting to deaden sound; a water-closet and bath-tub should be convenient, emptying not into the public sewer, but into a special receptacle capable of being easily emptied and disinfected. The furniture should be of the simplest and most inexpensive character, so that it may be thoroughly disinfected or destroyed. Adjoining the sick-room proper should be another for the nurse or attendant, with facilities for preparing necessary diet, and attending to various other matters of related character. The invalid's room should be approached through an anteroom, in which the physician can make necessary changes in his clothing and perform ablution or disinfection after his visit. Provision should be made for perfect ventilation and adequate control of light. The room or rooms set apart for the purpose herein indicated should not be used for other purposes, in order that they may be in constant readiness should they at any time be needed. The plan outlined can be modified in many ways to adapt itself to the means and circumstances of the individual patient. In any event, such preparation for disease in time of health would relieve the management of an attack of illness of much of the embarrassment and difficulty that now attend it.

The Children's Seashore House at Atlantic City.—It is but too well known that the high mortality among children during the summer is due principally to the heat, the food, and the surroundings, and it is among the poor that these conditions are at their worst and are most oppressively felt. Any measures by which these evils can be escaped may be calculated to prevent disease, to save life, and to aid recovery. Among the noble institutions of our city is that known as the Children's Seashore House at Atlantic City, from whose annual report for the year 1894 it appears that during the one-hundred-and-seven days in the course of the heated term that the institution was in operation there were admitted 1096 children and 261 mothers, the aggregate number of days for the former being 12,452, and for the latter 2251, averages of 11.3 and 8.6, respectively. The daily average number of children was 116, and of mothers 21. During the month of June, in response to an offer to receive free of charge all of the poor bed-ridden or crippled children in Philadelphia, 96 came from nine different hospitals and other public institutions. Similar provision has been made for the month of June of the current year. It may be interesting to note that the institution is the first of its kind in the United States, having been opened as a small cottage in 1872. In the twenty-three years of its existence it has gradually increased its capacity, until now it has accommodations for about 125 children and 30 mothers.

The work of the undertaking has outgrown its capacity, so that it has become necessary either to enlarge the existing accommodations or, what seems the preferable plan, to dispose of the present valuable property and purchase elsewhere a larger area at smaller cost.

The object of the institution is to furnish at a nominal cost to children of the poorer classes suffering from non-contagious diseases or the debilitating effects incident to the hot weather and crowding in the city an opportunity to avail themselves of the invigorating sea-air, in conjunction with good nursing and medical attendance. Children over three years of age are cared for by competent nurses in the wards, and, in order that young children may not be separated from their mothers, small cottages have been provided for these. Provision has also been made for somewhat older boys and girls, and for young women.

A Case for the Criminal and Postal Authorities to Consider.—We have before us a circular ostensibly issued for the benefit of the medical profession, with references to banks and to various medical journals, to give the concern seeming financial and medical authority, in which, by the aid of a patented contrivance, the profession is instructed in all the minutest details of the method of carrying out abortion. With other intimations, the ignorance of the most common principles of spelling (even spelling-reform spelling!) and of English grammar, exhibited in the circular, shows plainly the scientific and humanitarian motives that fathered it. The patented device, price named, pictured and described, is, of course, an absolute prerequisite for the abortionist. The dangers of abortion by any other method are described, but with this instrument, we are informed:

"Any case of abortion in which an operation is admissible may be brought to a finish within an hour, often in a few minutes. In the hands of the average doctor it is possible to detach, demolish, and extract the ovum with little danger or suffering, beginning the operation with an os that will only admit the little finger. It may be pressed into any size or shape desired, as small as the beak of a uterine sound or as large as the head of a three-months' embryo. Each instrument is a curet or snare as desired, and is covered with soft rubber, which makes them (*sic!*) practically harmless. When this operation is understood and established abortions will be dispatched with the same promptness as labor.

OPERATION: Pass the speculum. Strict antisepsis observed in every particular. Introduce a dilator and stretch the cervix. In accidental abortion requiring instrumental management the os is either dilated or easily dilatable. The exception to this rule will be noted further on. Fix with thumb-screw and immerse the staff in antiseptic. With this instrument thus adjusted you detach and demolish the ovum. It is detached by scraping the walls as you would a mortar with a thin spatula. It is then demolished by churning the uterus in every direction, using enough force to penetrate the ovum, and not the walls of the uterus. This is easily done," etc.

An Important Conference on the Bacteriology of Drinking-water.—Arrangements have been made, under the auspices of the American Public Health Association, for a conference of bacteriologists and chemists interested in water-analysis. The meeting will be held in New York City on June 21st and 22d, and will be devoted to formulating, as far as possible, uniform methods for determining the number and nature of microbes in water. In all departments of practical analysis it is now recognized that strict uniformity of method must be adopted if concordant results are to be obtained and unseemly contradictions in expert opinions avoided. Such a system has been in successful operation for years in various departments of agricultural and engineering chemistry. In no analytic work has there been more necessity for some agreement than in the bacteriologic examination of drinking-water. The existing methods have been rapidly developed and applied by persons unequally qualified. The result has been a confusion of inferences, and, moreover, a temptation to superficial inferences which have wrought much harm in sanitary chemistry.

The conference will endeavor to decide on the best methods of preparing culture-media, of cultivating and isolating microbes, and will go into the questions in much detail. It is probable that whatever agreement is reached will be formulated and published, with the hope that all sanitary chemists may subject its methods to trial and report their opinions and suggestions for improvement.

We anticipate excellent results from the plan, for in no field of applied science has the "little learning" been more dangerous than in the study of the bacteriology of drinking-water.

SOCIETY PROCEEDINGS.

AMERICAN SURGICAL ASSOCIATION.

Annual Meeting, Held at New York City, May 28, 29, and 30, 1895.

(Concluded from page 654.)

SECOND DAY—MAY 29TH.

Dr. Hunter McGuire, of Richmond, Va., read a paper on

THE OPERATIVE TREATMENT OF CARCINOMA OF THE MALE GENITALS.

One case of carcinoma of the penis will be found in about one-hundred cases of carcinoma, the disease making its appearance usually after middle life, appearing between forty-five and seventy years of age. It attacks at first the inner surface of the prepuce or glans penis, more commonly the latter. It begins as a small vesicle or nodule, which soon breaks down, leaving an ulcer with densely hard base and edges. Involvement of the glands is probably more common than is usually believed—having been found in forty cases out of forty-eight. The average duration of life in cases not operated on is given as twenty-two months. As soon as a diagnosis is made radical measures should be advised. Syphilis is the only disease with which carcinoma of the male genitals may be confounded. The appearance of the ulcer, covered with dead epithelium and very hard-based, the induration extending some distance around, but intense, and with its limit ill defined, will generally tell the character of the malady; if not, the microscope will decide. If phimosis exists, as it often does, and is often responsible for the new-growth, the prepuce should be split, to allow of complete inspection. The prognosis in early operation is good; after some delay, especially if iodid and mercury are used constitutionally, the prognosis is bad, and after still further delay and glandular infection it is almost if not quite hopeless. Amputation of the penis by the galvanic cautery, or by the écraseur, is not to be recommended.

In carcinoma of the scrotum the operation must be a radical one. All of the diseased part must be removed with the knife; if one testicle is involved, it too must be sacrificed; if the glands in the groin are enlarged and indurated, they should be removed. If the disease returns, a second, or even a third, operation should be performed.

The medullary form of carcinoma is the one most commonly found to involve the testicle. The average duration of the disease is about two years. Jacobson gives the following points of diagnostic value: 1. Continual, progressive, solid enlargement without inflammation. 2. Unequal consistence of the swelling at different parts. 3. Absence of translucency. 4. Tendency of the scrotal veins to become enlarged. 5. Increasing aches and painfulness. 6. In doubtful cases antiseptic tapping or exploratory incisions, preferably the latter. 7. Enlargement of the cord and, *à fortiori*, of the lumbar glands.

The danger to life in castration for carcinoma is very slight. The permanency of cure is uncertain. Still, life is prolonged and the patient made more comfortable. When the disease has progressed so far that secondary masses can be felt in the iliac fossa or in the lumbar region, and especially if cachexia is marked, the operation should not be performed, no matter how urgently the patient may demand it.

The symptoms that should induce the surgeon to suspect hard carcinoma of the prostate, and to distinguish it from prostatic hypertrophy, may be stated briefly as follows: 1. Frequency and difficulty of urination are great, and urgency of call more imperious than can be accounted for by the size of the prostate or by the amount of residual urine. 2. It is difficult, often impossible, to introduce a metallic sound into the bladder through the warped urethra. 3. Continuous pain in the pelvis, often extending to the thighs and legs. 4. Blood sometimes precedes or follows the stream of urine. 5. The prostate is enlarged, as hard as stone, and the finger in the rectum can often detect induration of one or both vesiculæ seminales.

Soft carcinoma is not so easily diagnosticated, and usually progresses very far before its presence is suspected. At first the symptoms are rectal, the patient has frequent calls to empty the rectum, there is tenesmus, and the stools contain blood and mucus; secondarily, there is frequency of micturition, with incontinence or retention. Rectal examination detects a large, soft, elastic tumor springing from the prostate, pushing backward into the rectum, eventually breaking into that organ and filling the pelvis. If necessary, the bladder should be regularly emptied by a catheter in cases of complete or partial retention; the rectum should be unloaded by enemata, and the stools kept soft by laxatives by the mouth. In some cases in which the rectal symptoms are distressing the formation of an artificial anus by colotomy may be effected with advantage.

No radical operation for the permanent cure of carcinoma of the prostate has yet been devised. Suprapubic cystotomy and drainage give physiologic rest to the bladder and immense relief in these cases. When the bladder has been opened by the simple suprapubic incision the diseased prostate can be thoroughly examined by the finger introduced into the bladder, or a small electric light introduced through the suprapubic opening permits of complete inspection of the vesical surface of the growth.

A case of suprapubic artificial urethra for hard carcinoma of the prostate was mentioned in which the patient wore for a year a silver plug to prevent the tract from closing, and when the urine accumulated in the bladder the plug was withdrawn and a soft-rubber catheter introduced. When the water had all escaped the catheter was taken out and the plug replaced. Thus nearly all the pain and frequency of urination were avoided. Pain in the pelvis and legs, and other symptoms of carcinoma, continued until death.

AT A CLINIC AT THE NEW YORK HOSPITAL,

DR. ARPAD G. GERSTER reported a case of deformity of the fibula, which was very much reduced by operation, and in which the fibula was as thick as the tibia should be. A second case was that of a young girl in which tumor of the brain was diagnosticated, and in which, after operation, a gold plate was inserted and worn for two-and-three-quarters years. At the end of this time the symptoms returned, and the skull was again opened, and when the plate was removed a secondary growth—sarcoma—was found. A third case was that of a young man in which castration had been performed, and in addition the entire cord and seminal glands extirpated. The patient recovered and was out of bed in a very short time.

DR. WEIR presented several cases, one of which was in a patient in whom the deformity due to a sunken nose had been admirably corrected. The second was a case of compound fracture of the skull, in which trephining was practised and a silver plate inserted. The third and fourth were in young men with tuberculous testes on both sides, in each of which an artificial testis was inserted. The fifth case was in an old man who had suffered from prostatic trouble, which was somewhat relieved by operation. The sixth showed the good results of operative interference in a case of dislocation of the elbow. The seventh was a case of fracture of the external condyle, and the eighth was in a boy who had complained that one of his testicles had not descended.

DR. WEIR read the notes of a case in a woman who presented sarcoma springing from the posterior wall of the stomach. The patient was operated on, and did very well.

DR. ABBE produced several patients: one of general peritonitis, in which recovery followed operation; another, of jugular thrombosis, in which operation had been performed seven weeks before, followed by uninterrupted recovery; several cases of tumor of the brain, one of esophageal stricture, and one of tumor of the kidney, all of which were much benefited.

DR. ARPAD G. GERSTER showed a case in which very extensive extirpation of the rectum was performed on November 18, 1884. The man had an artificial anus, and the case is interesting from the fact that plastic operations had to be performed in order to open up the anus of each of the patient's first two children, although the anus of a third child was normal.

DR. HOMANS stated that he had had a very similar case.

DR. WILLIAM T. BULL presented a case in which gastro-enterostomy had been performed for the relief of typical symptoms of pyloric obstruction, four years and nine months ago, with a good result. Another case illustrated beautifully what may be accomplished by skin-grafting, and a third case was mentioned, and a photograph shown, in which skin-grafting had also been successful.

DR. MURRAY showed a case of tumor of the tongue and one of disarticulation of the hip-joint for carcinoma, both of which were much benefitted by operation. He also showed a specimen from an aneurism from the circle of Willis which he had recently removed from a man thirty years of age, and which was due to an injury received from a fall.

AT A CLINIC AT THE ROOSEVELT HOSPITAL,

DR. LANGE presented two cases of suppurative disease of the middle ear: one of a man with tuberculous disease of the kidneys, bladder, and prostate, in which it was necessary to extirpate the kidney; one of a woman with disease of the ureter, after the removal of which she gained forty pounds. He also showed a case in which two tumors of the broad ligament had been removed, after which the patient gained 130 pounds. The last case was in a patient with tuberculosis, who had been to several hospitals, and the diagnosis of carcinoma had been made on account of the large number of small masses scattered around over the surface of the breast. The bottom of the breast was removed, the operation being a great success.

DR. FOWLER showed a case of dissection of the extensor tendon of the middle finger of the left hand, which had been torn loose from its aponeurotic structure in the course of playing upon a violin. After operation the patient was able to carry on his vocation as a professional violinist. A second case was one of rupture of the tendo Achillis, which was sutured five months after the accident, and as a result the patient was able to walk without a perceptible limp. A third case was in a man seventy-one years of age, who had ruptured the patellar attachment of the quadriceps extensor of one leg, and six months later met with a similar accident with the other. The muscle was sutured, the functional result being excellent and union perfect. A fourth case was in a man who had suffered for thirteen years with facial neuralgia, and in which a successful operation was performed for its relief. The last case was in a little girl who had suffered from a deformity of the auricular appendages, which was remedied by transplantation from one side to the other.

DR. RUSHMORE showed a case in which the deformity due to the head being drawn down to one side was remedied; and one in which complete dislocation of the right knee had occurred. Upon admission the second patient complained of severe pains in the hip, and upon opening the joint the dislocation was reduced. Shortly afterward, however, there was a displacement, and a second operation was necessary. At present the man has a perfectly useful limb, has all the motions of the hip-joint, and there is but one-and-one-half inches of shortening.

DR. CHARLES MCBURNEY presented a man who had been thrown from his horse while hunting, the horse falling on him. The bladder was forced out of position, and a large incision was necessary in order to locate it. It was also found that an extensive fracture of the pelvis had occurred, and the pelvic cavity was full of urine and extravasated blood. The fractures united, and the bladder resumed its functions, it being possible to pass a No. 29 without any trouble.

The next patient illustrated the results of operation for malignant disease of the left tonsil. The tonsil and all the adjacent tissue were removed, including a piece of the soft palate. The patient has remained entirely well since the operation.

The third patient was a young lady, who had been operated on for a spindle-cell sarcoma at the lower end of the radius, and in whom a part of the radius was removed.

The next case was that of a boy who was suffering from the effects of a thirty-two caliber ball, which had entered the thigh behind the femur. Ten days after the accident a pulsating tumor was noticed in the popliteal space, which was dissected out, and primary union took place, since which time there has been complete flexion.

The fifth patient suffered from rupture of the quadriceps extensor, and about eight months afterward he ruptured the extensor on the other side. The muscles were sutured, with primary union and complete restoration of function.

The next patient was operated on in December, 1893, for ostitis of the lower jaw. The case is interesting on account of the spiral spring which the speaker inserted to prevent deformity.

The next case illustrated the result of operation for recurring appendicitis. Dr. McBurney stated he had operated on thirty cases of this affection without a death. One of the principal points about the operation is the very small opening that is made, a large opening not being necessary. The last case was very similar to the preceding. The scar in this case was extremely small.

Third Day—May 30th.

The following officers were elected for the ensuing year: *President*, L. McLane Tiffany, of Baltimore; *Vice-Presidents*, Christian Fenger, of Chicago, W. H. Carmalt, of New Haven; *Secretary*, M. H. Richardson, of Boston; *Treasurer*, N. P. Dandridge, of Cincinnati; *Recorder*, De Forest Willard, of Philadelphia.

The next meeting is to be held at Detroit; Dr. T. A. McGraw was made Chairman of the Committee of Arrangements.

Dr. J. S. Wight, of Brooklyn, read a paper entitled

TREATMENT OF CARCINOMA OF THE BREAST.

He reported 17 cases of carcinoma of the breast, in nearly all of which the results from operation were very favorable, and the patients continued immune and in good health after periods ranging from one to six years.

Tumors of the breast may be divided into three kinds: 1, those that may be cured by operation; 2, those in which an operation may give temporary relief and comfort; 3, those in which an operation is impossible and inadvisable. The cardinal precept is, the earlier an operation, other things being equal, the more certain will be the prospect of a cure. The minimum of time should be taken, and the tumor, as well as its infected environment, must be removed. In the case of an incipient tumor of the breast the entire breast must be removed. Disaster follows neglect of this rule.

From fifteen to forty-five minutes are required for the operation. A continuous incision is made around the tumor, including, if possible, all infected tissue. Then the growth is rapidly excised, the hands of assistants following the knife to repress and control hemorrhage. Pressure-forceps are freely used on all the larger bleeding vessels. If any adjacent or subjacent portions of infected tissue remain, they are quickly excised. In all cases the submammary fascia is removed, and the sheath of the great pectoral muscle is dissected off in front. A sterilized towel is pressed upon the wounded surface, to control the oozing. The contents of the axilla are excised. The incision extends from the angle of the breast-wound, so as not to expose the growth in the axilla. A pair of long-jawed pressure-forceps is pushed along the surface of the axillary growth so as to grasp the non-infected tissue. With a knife or a pair of scissors carried along the jaws of the forceps, the tumor is quickly cut away, leaving the forceps in place to prevent hemorrhage. This process is repeated, using as many long-jawed forceps as required, until the entire growth is cut out. The pressure-forceps are now removed from the breast-wound, which is again disinfected. As a rule, no ligatures are needed, the sutures, made of silk, acting as such when applied as follows: Long, curved needles are passed through the flaps and under the entire base of the wound, and are then tied so as to bring the entire surface of the wound together. These are called deep sutures.

The treatment has consisted, for the most part, in the persistent use of arsenic bromid. In some cases this remedy has been given for two or three years, with occasional intermissions. The dose has been from gr. $\frac{1}{40}$ to gr. $\frac{1}{10}$, beginning with a smaller dose and gradually increasing. In some instances a solution of gold and arsenic bromid, in doses of from 5 to 15 drops after meals, has been employed. These remedies are given on the theory that they are antagonistic to the infection of the disease under consideration. Calcium carbonate has been given to some extent as an adjuvant to the other remedies, but it is of inferior value compared with arsenic and gold.

Dr. Arpad G. Gerster, of New York, read a paper entitled

THE MODERN OPERATIVE TREATMENT OF RECTAL CARCINOMA.

He divided the subject into (1) the modern methods of attack employed in extirpation and the details of the after-treatment; (2) the preservation of or substitutes for the sphincteric function; and (3) remote sequelæ of these newer methods.

Early operations for the removal of extensive rectal neoplasms were imperfect, bloody, and dangerous, and attended with a high rate of mortality. Volkmann, in 1883, in removing a periosteal sarcoma of the sacrum, accidentally opened the sacral canal; the patient did not suffer any serious damage, and promptly recovered. This observation encouraged Kraske, then assistant to Volkmann, to study the question, and, as a fruit of these studies, appeared his remarkable publication in 1885, advocating excision of the left half of the lower portion of the sacrum up to the third sacral foramen, thus enabling the surgeon to approach the gut from behind and attack a large number of tumors from above. The relative position of colotomy was changed in two ways. The number of colotomies performed as a purely palliative step steadily diminished, being limited to hopeless cases; but Kraske's operation is also employed when a satisfactory cleansing of the large gut is rendered impossible or even difficult by whatever cause, and more so preceding resection than amputation, for obvious reasons. More and more stress is laid upon thorough evacuation and cleansing of the gut as a preliminary aseptic measure, with or without colotomy.

Kraske's procedure, effected through a median longitudinal incision, was modified by Heinecke, who made a T-shaped external incision, dividing the sacrum and coccyx along the lines of this incision, thus producing two lateral triangular osteo integumental flaps, which were to be replaced and sutured after the rectal operation was finished.. This in turn was modified by Kocher, with a view of enabling the surgeon to divide the sacrum above the third sacral foramen without injury to the third and fourth anterior sacral nerves. Levy recommended an incision of the shape of an inverted capital U, the arch of the letter corresponding to the transverse section through the sacrum. Hegar employed a V-shaped osteo-integumental flap.

It is curious that the vagina, offering such a ready and accessible roadway to the rectum, had so long escaped the attention and ingenuity of enterprising rectal surgeons. This was suggested at about the same time by Rehn and by Campenon, a Frenchman. This method is applicable for both resection and amputation of the rectum.

To preserve the sphincteric apparatus whenever possible, and not to interfere with its nervous supply, by respecting the integrity of the upper three pairs of sacral motor nerves has become a generally-accepted principle of modern surgery. A number of more or less successful attempts have been made to provide a substitute for lost sphincteric action. Willems, Rydygier, and Witzel almost simultaneously proposed similar methods, consisting of an ingenious utilization of part of the gluteus muscle for the occlusion of the amputated and otherwise patulous rectal stump. Witzel reported six successful cases.

Gersung advocated a radically different procedure, consisting in simple torsion around its own axis of the extremity of the rectal stump, followed by fixation of the twisted gut to the skin by suture. An elastic resistance to the pressure of the fecal column is thus generated, sufficient to retain solid and liquid matter until the resistance is overcome by voluntary intra-abdominal pressure. This method, being the simplest, certainly deserves the preference and extensive trial.

Among the remote sequelæ, other than incontinence, is prolapse of the rectum. Morestin mentions too well-observed instances of procidentia uteri directly produced by Kraske's operation. Sacral fistulæ are the bane of modern rectal surgery.

DR. L. MCLANE TIFFANY expressed the opinion that the floor of the mouth should be opened in operating on cases of carcinoma of the tongue. As to the amount of tissue to be taken away, he thought this depended very largely upon the operator, but in the case of the breast he considered it right to take everything in the neighborhood. He stated that he had had two deaths in 164 cases, one of which was due to sepsis and the other took place during cauterization. He contended that local recurrence meant recurrence in the neighborhood of the scar, and stated that a second local recurrence is the most suddenly fatal. In some cases of carcinoma of the breast life has been prolonged ten or fifteen years by operation.

DR. MCGRAW agreed that in all cases, however young, the axillary glands should be removed.

DR. CHRISTIAN FENGER said that he considered it important that when the floor of the mouth and the tongue are taken away something in the way of a substitute should be given the patient. He explained his method of doing this, which consisted in turning up from the neck a flap which was sewed to the tongue, or, when that was removed, to the mucous membrane.

DR. W. H. CARMALT, of New Haven, suggested that a great deal of the danger in these operations might be avoided if a channel could be made through the trachea, through which the patients could breathe.

DR. J. COLLINS WARREN showed a specimen which he had removed from a rib in an operation, considered by him to be complete. He thought that the operation should include resection of the jaw and the removal of at least half, if not the whole, of the tongue. He had obtained the histories of about 40 or 50 of his cases in which he had operated after 1880. So far as he knew, only 2 deaths have occurred in about 80 cases, one of which was due to erysipelas, and the other to renal failure. There were about 8 recoveries out of 29 cases, a proportion of 27 per cent. In operating on the breast he always begins his dissection in the axilla, and makes an incision up to the clavicle, with another one at right angles to it.

The next subject for discussion was

THE PRESENT STATUS OF ANESTHESIA.

DR. G. W. GAY, of Boston, read a paper entitled

CIRCUMSTANCES UNDER WHICH CHLOROFORM IS PREFERABLE TO ETHER AS AN ANESTHETIC.

DR. ROBERT F. WEIR, of New York, read an article entitled

THE INFLUENCE OF ETHER ON THE KIDNEYS.

DR. T. F. PREWITT, of St. Louis, said that in certain cases of respiratory trouble chloroform was preferable to ether, but in many conditions of local trouble he thought ether was better. He considered chloroform safer in diseases of the kidney and the heart.

DR. H. R. WHARTON, of Philadelphia, said that in the past he had usually employed chloroform in performing tracheotomy, but at the present time he was not using any anesthetic during this operation. He considered cocain very valuable, and called attention to the great risk of administering ether to very young children, as he had seen death follow in a very few hours in a child less than six months old. Dr. Wharton never uses anesthetics now in cases under six years of age, except when absolutely necessary, when he prefers chloroform.

DR. J. D. RUSHMORE, of Brooklyn, said that he had one case of death in which he had used ether in a child. He considers chloroform preferable in those cases in which there is trouble with respiration, as, for instance, from spasms. In many cases in young children anything is to be avoided that will interfere with the heart's action.

In the past it was taught that ether should be given as concentrated as possible, and this is but one instance of erroneous teaching. The method used by Dr. Rushmore at present is to permit the patient to get plenty of air while being etherized, and he claimed that ether should be administered with clock-work regularity, *i. e.*, drop by drop, instead of a large a quantity at one time.

DR. ROBERT ABBE, of New York, said that he did not agree with those who intimated that the giving of ether required less skill than the giving of chloroform. He stated that hypodermic injection of morphin previous to administering the ether was useful. He considered that the exposure of the body during operation and during transference to and from the operating-room was a very prolific source of pulmonary trouble. With regard to the anesthetic best suited to children, Dr. Abbe stated that he considered ether preferable, and that he had abandoned the use of chloroform in children since he had one death which he considered was due to this anesthetic. He related that he had treated a stab-wound of the stomach under cocain, and that he had also performed supra-pubic cystotomy under its influence. In his opinion the patient upon whom the supra-pubic cystotomy was performed would certainly have died had ether been used.

DR. F. E. LANGE, of New York, said that both chloroform and ether had their indications and their contraindications, but as long as no absolutely safe anesthetic existed he considered ether good enough. He had lost patients under both chloroform and ether. He contended that chloroform was not the anesthetic to be used when there was a weak heart, but admitted that in some cases ether was preferable.

The discussion on the

RESTORATION OF JOINT-FUNCTION AFTER FRACTURE,

which was to have been taken part in by DRS. W. H. CARMALT, of New Haven; L. A. SAYRE, of New York; N. P. DANDRIDGE, of Cincinnati; J. B. ROBERTS, of Philadelphia; E. H. BRADFORD, of Boston; and JOHN ASHHURST, JR., of Philadelphia, was read by title.

DR. JOHN B. DEAVER, of Philadelphia, then presented a paper upon the

INFLUENCE OF ETHER-NARCOSIS UPON THE GENITO-URINARY TRACT.

He stated that examinations of the urine of subjects having normal kidneys, before and after administering chloroform, showed that in one-third there were deleterious effects on the kidneys, lasting two or three days, with traces of albumin, cylinders, leukocytes, and epithelium from the kidneys, ureters, and bladder. The effect of etherization on general tissue-metamorphosis, apart from any effect upon the kidneys, was shown by the effect upon the specific gravity of the urine. In fifty cases it was markedly increased, while in only thirteen it was decreased. The conclusion is that ether has a very considerable irritating effect on the kidneys. The necessity of examining the urine of every patient to be anesthetized is to be emphasized.

The following papers were read by title:

GUNSHOT-WOUNDS OF THE HEART,

by CLAUDIUS H. MASTIN, M. D., of Mobile (which will shortly appear in THE MEDICAL NEWS).

PERSONAL EXPERIENCES WITH MAD DOGS,

by DR. BASIL NORRIS.

THE RADICAL CURE OF HERNIA BY A NEW PROCEDURE,

by DR. JOHN H. PACKARD, of Philadelphia.

LIGATURE OF THE SPERMATIC CORD IN THE TREATMENT OF HYPERTROPHY OF THE PROSTATE,

by DR. J. EWING MEARS, of Philadelphia.

DR. HENRY R. WHARTON, of Philadelphia, read a paper entitled

DISLOCATION OF THE ULNAR NERVE AT THE ELBOW.

He reported a case of his own, together with thirteen others collected from the literature. The condition is a comparatively rare one, occurring independently of fractures or dislocations of the bones of the elbow, and may result from direct violence, or from muscular effort or violent flexion of the arm at the elbow, causing laceration of the fascia that holds the nerve in its groove at the back of the inner condyle of the humerus. In two cases of dislocation of the ulnar nerve in dead subjects the internal condyle of the humerus was found small, and the groove for the nerve shallow, and the fascia binding down the nerve very poorly developed; an unusual forward position of the internal lateral ligament was also noted.

The most satisfactory method of securing the nerve consists in its exposure, and, having made a bed for the nerve by dividing the fibrous structures behind the inner condyle of the humerus, to fix it in its usual position by two kangaroo-tendon loops passed through the inner margin of the triceps tendon and somewhat loosely around the nerve, several sutures being used to unite the divided margin of the fascial expansion of the triceps tendon superficial to the nerve. In all cases in which the nerve has been exposed and sutured in its normal position the result has been satisfactory. In no recorded case has neuritis developed as a result of operative treatment.

DR. H. L. BURRELL, of Boston, read a paper entitled

LIGATURE OF THE INNOMINATE ARTERY, WITH THE REPORT OF A CASE.

A paper on

TWO CASES OF DISPLACEMENT OF THE ULNAR NERVE AT THE ELBOW SUCCESSFULLY TREATED BY OPERATION,

by SIR WILLIAM MACCORMAC, of London, was read by title.

DR. JOHN WHEELOCK ELLIOTT, of Boston, read a paper on

IMMEDIATE SUTURE OF THE GALL-DUCTS AND GALL-BLADDER AFTER EXTRACTION OF STONES, WITH CASES.

He contended that the operations of cholecystotomy and cholecystenterostomy have become too much the routine practice for the relief of gall-stones, and that incision of the ducts or the gall-bladder followed by immediate suture is the proper operation in the majority of cases, especially in recent cases. He reported five such operations: one on the hepatic duct, one on the common duct, and three on the gall-bladder. All were successful. The following conclusions were presented:

1. Every operation should be conducted with the idea

of restoring the functions of the ducts, and any irreparable injury to them is a serious calamity.

2. Immediate closure of the gall-bladder is safe if the ducts are clear and its walls healthy.

3. Incision and suture of the cystic duct are preferable to prolonged manipulation.

4. Incision and suture of the hepatic and common ducts constitute the operation of choice for impacted stones.

5. The mortality of this operation is less than 18 per cent.

6. If the condition of the patient is critical, a preliminary cholecystotomy is advisable.

7. Cholecystenterostomy should be reserved for irremediable stenosis of the common duct.

DR. S. J. MIXTER, of Boston, read a paper entitled

CONGENITAL ESOPHAGEAL POUCH; EXCISION; IMMEDIATE SUTURE OF ESOPHAGUS; RECOVERY.

A woman, fifty years of age, had always had some difficulty in swallowing, which during four years had become aggravated. Esophageal bougies were passed, previous to her admission to the hospital, but without marked improvement. Attempts were made to pass esophageal bougies and probangs, but without success, all being stopped about eight-and-one-half inches from the incisor teeth. Some regurgitation of food attended these attempts. It was found, however, that a bougie of any size that could be made to pass the obstruction by hugging the right side of the esophagus went on without difficulty into the stomach without being grasped as by a stricture. After three weeks of treatment the woman was able to swallow slightly better; but after some time she returned, having worn an esophageal tube most of the time, and having only been able to swallow soft solids and liquids. The operation consisted in an incision, three inches long, parallel to and in front of the sterno-mastoid muscle. The omo-hyoid was divided and the esophagus reached in the usual manner. The bulb of a probang previously introduced could be easily felt, and on dissection the pouch in which it was situated was easily isolated. An incision was made into the sac, whence the finger could be passed without difficulty up into the pharynx, and, after hooking it over a sharp edge of mucous membrane, down into the esophagus. The largest bougie (about three-quarters of an inch in diameter) could be easily passed into the stomach after the tip had been guided by the finger past the fold. The pouch, about the size of an egg, lay to the left and behind the esophagus. Enough of the sac was removed to make the esophagus a straight tube from the "spur" up, and the edges were united with interrupted catgut stitches. The external wound was closed, with the exception of a small opening for drainage by means of a gauze wick. Recovery was perfect, and the patient had had no return of the trouble, being able to swallow any kind of food.

This case is a perfect example of the true esophageal pouch, there being no constriction in the tube, and the obstruction to the passage of food being only the thin crescentic edge of the spur between the pouch and the esophagus, which, pressed against the opposite side of the esophagus, acted as a valve.

DR. ROSWELL PARK, of Buffalo, read a paper

ON THE CONSEQUENCES OF HYPEREMIA AND THE PATHOLOGY OF INFLAMMATION AND SUPPURATION.

He pointed out that purely mechanical and traumatic disturbances and surgical infectious diseases, especially their local manifestations, have about the same apparent beginning, and their local phenomena are in general the same up to a certain point, when there is wide variation in local manifestations and systemic complications. Heretofore all these manifestations have been included under the term "inflammation," and it has been taught that inflammation at one time is congestion with slight exudation, at another hyperemia with copious exudation, or that at still another it leads to pus-production, while at yet another its final result is hyperplasia and tissue new-formation, with more or less induration. Hence these have been described as "simple," "acute," "infective," and "chronic" inflammation, etc.

Dr. Park's thesis was that the term inflammation ought to be confined exclusively to one distinct class of lesions, those produced by micro-organisms, and never to those other lesions into which the question of infectious micro-organisms does not enter, but that such lesions should have names based upon the pathologic lesions.

It is well enough to say that all inflammation begins with congestion, and this may be true; but many congestions never terminate in genuine inflammation. Congestion should be described as the result of certain exciting causes—of which bacteria may be one—in which case the congestion itself is subsidiary, and in a measure accidental or conservative.

A violent sprain of the knee-joint may occasion *calor, rubor, dolor, et tumor*, with disturbed function from dilatation of vessels, hyperemia, tension and pressure on nerves, chemic change, and the escape of fluid into previously existing cavities. Let everything go well and this fluid is quickly absorbed, the vessels return to their natural size, pain, redness, and swelling subside, save for perhaps a little chronic thickening of the parts. This process should not be spoken of as "inflammation." But let there be infection from any source, and let micro-organisms once secure access to the parts within, and how quickly is the whole clinical picture changed. There is not only purulent synovitis or pyarthrosis, but unmistakable, perhaps fatal, constitutional disturbances. This is inflammation—a condition of congestion and exudation *plus* the special disastrous characteristic *infection*. Without infection there is no genuine inflammation.

Dr. Park was inclined to indorse Metschnikoff's definition of inflammation as a phagocytic reaction on the part of the organism against irritants in the shape of micro-organisms, the essential phenomena of inflammation representing an actual struggle between the phagocytes and the irritants—Virchow's "battle of the cells"—pus and pus-cells being simply the *débris*—the dead bodies of animal cells slain in the conflict. That animal cells possess some such activity has been shown by many observers independently, this fact having been called in later years "chemiotaxis." The peculiar attraction between bacterium and cell, by which the latter endeavors to become a phagocyte, while yet inexplicable, is unmistakable, and phagocytosis is a proved fact.

Dr. Park submitted a classification for text-book arrangement, commencing with hyperemia and congestion, then passing to inflammation—*i. e.*, infection—the matter of pus-formation, first in its pathologic, and then in its clinical aspect. He differentiated between the various substances known as pus and suggested the following names: For material produced in the course of an acute phlegmon, infectious, toxic, the old name "pus;" for material from healthy granulating surfaces, or from raw tissues that have not yet had time to granulate, which is free from bacteria, and has no infectious or toxic properties, the name "pyoid" or "puruloid;" for the contents of old cold abscesses that have long since lost everything except the grossest and crudest resemblance to the pus which it may originally have been—the name "archepyon."

There is more in all this than straining after accuracy, because the treatment in these different conditions is distinct and unmistakable, and would be unfortunate in either of the other states: real, genuine pus requiring the promptest possible evacuation, as pus left alone will do more harm than the knife of the surgeon if judiciously used; pyoid or puruloid material calling for little or no special treatment, except absolute cleanliness, and archepyon indicating a condition that calls for extirpation of infected tissue, complete and final disposition of that membrane formerly known as pyogenic membrane, eradication of all infected tissue, etc.

The limiting membrane of old or cold abscesses is anything but pus-producing, but, on the other hand, pus-protective, and hence to call this membrane pyogenic is a misnomer. Dr. Park suggested, instead, "pyophylactic." He raised some practical questions as to the extirpation of pyophylactic membrane in the average cold abscess, and stated that when complete extirpation was impossible he excised so much as proper access could be had to, and then used a solution of zinc chlorid, 50 per cent. strength, to mop out the sinus after being curetted, or, in case the curet cannot follow it, to be injected into the sinus.

If the pyophylactic membrane is not treated by extirpation, it is gradually made away with by granulation-tissue, and the removal of its component parts by phagocytic action and substitution of granulations therefor. This process is liable to interruption or complete cessation, even to reinfection from organisms yet alive within its substance. Hence, the ideal method of dealing with this membrane is complete removal; next to this, complete destruction by caustic agents; and in default of these, the application of antiseptics and stimulating substances.

Dr. Park emphasized the distinction between the obligate and the facultative pyogenic bacteria, the former including those whose function seems to be solely to set up septic disturbance and produce pus — the various staphylococci, namely, the S. pyogenes aureus, albus, citreus, epidermidis albus, etc.—and the streptococci: and the latter class including those that have only occasional pyogenic properties, such as the bacillus tuberculosis of Koch, the bacillus tetani, the bacillus mallei, etc.

DR. W. S. HALSTED pointed out some of the difficulties often encountered in determining what was present in a joint—that is, whether it be a hyperemia or an inflammation, instancing the fact that a subcutaneous injury about the knee-joint may cause much redness, but this might not be due to micro-organisms. He referred to the case of a man with endocarditis and sloughing of the valves of the heart due entirely to gonococci. As regards granulation, it is very difficult sometimes to tell from the product obtained whether an infection has taken place or not.

DR. L. MCLANE TIFFANY said that the difficulty in reaching a conclusion was the determination whether or not a micro-organism was present. This is the most important point of all and seems to be the most interesting in the new nomenclature.

DR. JOHN PARMENTER, of Buffalo, said that the problem in his opinion was, What is the causation of pus? He said that in several cases he had been in doubt.

DR. PARK, in conclusion, said that in his opinion, if organisms had infected, one would soon be made aware of the fact by the formation of pus; and if this does not occur, it would be safe to assume that there is no infection.

DR. CHRISTIAN FENGER, of Chicago, read a paper entitled

HERNIA OF THE BLADDER AS MET WITH DURING OPERATIONS FOR INGUINAL AND CRURAL HERNIA.

DR. S. H. WEEKS, of Portland, Me., reported

A CASE OF CHOLECYSTECTOMY.

The patient was a married woman forty-seven years of age, who for four years had been subject to severe paroxysmal attacks of pain in the upper part of the abdomen. The pain would begin in the right hypochondriac region and extend across to the epigastric and left hypochondriac regions, at times also extending upward toward the right shoulder. It was most intense in the epigastric region and extended upward to the neck in the median line. During the paroxysms the woman vomited freely, the vomited matter always containing a large amount of bile. A diagnosis of biliary colic due to occlusion of the cystic duct having been made, an operation was recommended, and was performed eighteen days after admission to the hospital. A vertical incision about four inches long was made external to the right rectus muscle at a point corresponding to the tip of the tenth rib. The gall-bladder was much contracted and contained from twelve to fifteen small calculi, varying in size from a gravel to a pea. After these were removed a finger was passed along the under surface of the cystic duct, which was found to be occluded by a large calculus. This was removed by making an incision through the walls of the duct, and was found to be 20 mm. in its long diameter and 14 mm. transversely. After the removal of the stone from the cystic duct the gall-bladder was excised, the cystic duct being tied as high up as possible; but it could not be tied beyond the incision for the removal of the calculus, and consequently there was an opening through which bile could escape. A drainage-tube of glass was inserted well down to the bottom of the wound, and iodoform-gauze packed freely about it. The gauze was packed into the wound during the operation upon the gall-bladder and ducts, to protect the peritoneal cavity from blood and bile. Much pain followed the operation for several days, probably occasioned by the glass drainage-tube, and a rubber tube was recommended in preference, supplementing it always by gauze packed around the drainage-tube.

At first there were pain in the side, vomiting, and high temperature, a large amount of bile escaping from the wound, but five days after the operation the patient rested well, and about three weeks later was discharged from the hospital, the wound having completely healed, and the patient being entirely relieved of all her former symptoms.

DR. M. H. RICHARDSON showed two stones that he had recently removed. In the first case the stone was removed by a suprapubic operation, care being used to effect distention of the bladder by boric acid.

DR. ROSWELL PARK, of Buffalo, read a paper entitled

INJURIES TO THE PNEUMOGASTRIC AND PHRENIC NERVES.

DR. BRADFORD presented a photograph showing the good results that had been obtained by a man, sixty years of age, in an attempt to get motion in the knee-joint, by tying weights to his feet and sitting on a chair and throwing the weights off. In this peculiar way complete motion of the joint was restored, and the man has since been able to walk perfectly well.

ASSOCIATION OF AMERICAN PHYSICIANS.

Tenth Annual Meeting, Held in the Army Medical Museum and Library, Washington, D. C., May 30 and 31, 1895.

(Concluded from page 650.)

SECOND DAY—MAY 31ST.

A discussion on

DIPHTHERIA-ANTITOXIN

was opened DR. **WILLIAM H. WELCH**, of Baltimore, who said that the attack upon the soundness of the experimental basis on which the use of the antitoxin was employed in the treatment of diphtheria was not justified. Such a position could only be assumed by denying the etiologic relations of the Klebs-Loeffler bacillus, and this but very few are willing to do. The results of experiments on animals have been most striking; in the case of tetanus they have, however, been even more so; but the results obtained in animals cannot be directly applied to man. The therapeutic outcome of the use of the antitoxin against tetanus has been disappointing because the toxins generated accumulate in large amounts before the symptoms of the disease make their appearance and an opportunity is afforded for the use of the antitoxin. How the antitoxin acts is not yet known. According to one view, it exerts a chemic action of antidotal character, the poison or its effects being neutralized. According to a second view, the action is of a vital character, and is effected through the agency of the cells, which are rendered more resistant and less tolerant of invasion. As against the former is the occurrence of palsies, notwithstanding the treatment. That the treatment is not invariably efficacious may be partly owing to the fact that it is not possible to determine the amount of toxin circulating in the blood at a given time, and therefore also the dosage of the antitoxin to be used. The benefits of the treatment grow less as the period of the disease is the more advanced. The only certain test of the diphtheric nature of a case resides in the results of bacteriologic examination. Certain mild cases have been found to be diphtheric, while in others presenting membrane characteristic organisms have not been found. It seems likely that between 5 and 10 per cent. of the latter cases are not diphtheric.

Further, diphtheria in the human being differs from experimental diphtheria in not always being a pure infection; very commonly, indeed, it is a condition of multiple infection. The action of the antitoxin may be looked upon as a natural mode of cure, for it is probable that recovery ensues under ordinary conditions by the development in the blood of an antitoxin, only that by the artificial method the cure is hastened and perhaps fortified. The statistics thus far available show that by means of the antitoxin the mortality from diphtheria in various countries has been reduced from between 40 and 50 per cent. to between 10 and 20 per cent. These figures are viewed from three standpoints: (1) that they prove too much—*i. e.*, nothing; (2) that they leave the question in doubt; (3) that they justify a favorable conclusion.

It is yet too early to determine the question from the figures alone. More favorable, however, than the mere figures is the personal impression of the clinician as to the influence exerted upon the disease, and this has been generally favorable. This impression has been fortified by the results of post-mortem examination, which has almost invariably shown an absence of fresh diphtheria. The employment of the antitoxin, in contradiction of earlier statements, does seem to cause some injurious effects, such as albuminuria, nephritis, profound constitutional phenomena, etc. In view of all of the facts, however, it is the duty of the physician to use the remedy and at as early a period in the disease as possible, exercising care in dosage to avert unpleasant effects.

A paper by **DR. H. C. ERNST**, of Jamaica Plain, on

THE PREPARATION OF THE ANTITOXIN,

was read by title.

DR. A. L. MASON, of Boston, presented statistics from the diphtheria-department of the Boston City Hospital, which receives a large number of the worst class of cases. The mortality from diphtheria for ten years prior to the use of the antitoxin, in December, 1894, ranged from 45 to 52 per cent., one-third of the cases requiring tracheotomy or intubation. From December 12, 1894, to May 14, 1895, among 306 cases treated with the antitoxin, there were 81 deaths—a mortality of 26.4 per cent. Of the whole number, 31 required operative interference, with 19 deaths—a mortality of 61 per cent., and a reduction of about one-third. From December 12, 1893, to May 12, 1894, there occurred 258 cases in which the Klebs-Loeffler bacillus was found, with a mortality of 44 per cent. For the city at large the mortality from January 1 to May 1, 1895, during the antitoxin-period, was 14 per cent., as compared with a mortality of 31 per cent. during the corresponding period of previous years. Even making allowance for a number of mild cases that may be included in these figures, the conclusion cannot be escaped that a distinct reduction in the mortality has been effected. Further, the favorable results are apparent not only in the individual case, but also in the general appearance of the diphtheria-ward. Instead of serious and anxious faces, the ward presents an appearance of comfort and contentment, and the various officers approach their service in these wards with more satisfaction than before. The use of the new remedy has had a distinctly beneficial moral effect on the attendants. The immunity conferred by prophylactic doses of the antitoxin has proved to be of but short duration. The influence of the treatment upon the epidemic occurrence of the disease is not appreciable. The effect on the membrane in the individual case is remarkable; it rapidly becomes circumscribed and soon disappears. It has been found that the proportion of tracheotomies and intubations has been diminished with the use of the antitoxin-treatment, while the actual results in the cases operated upon have been more favorable than before. At the Boston City Hospital the proportion of cases in which paralysis has developed is smaller than heretofore, and the treatment has altogether proved most valuable.

Dr. A. Jacobi, of New York, said that he was altogether favorably impressed with the efficacy of the antitoxin-treatment, although the present statistics are not sufficient to justify a final conclusion. Occasionally it is found that other methods of treatment will yield remarkably good results; thus of 40 consecutive cases treated with mercurials recovery ensued in 39. The local treatment must not be ignored when the antitoxin is used. It is well to recommend also the conjunction of the mercurial treatment, which alone has proved so serviceable. The clinician is not so much concerned as to which remedy brings about the good result, just so it is effected. Dr. Jacobi expressed unwillingness to accept the postulate that the detection of the Klebs-Loeffler bacillus is essential to the diagnosis of diphtheria. In most cases of diphtheria the bacilli and micrococci are present in association. At any rate, it is certain that the antitoxin-treatment can only be efficacious in cases presenting diphtheria-bacilli.

Dr. John S. Billings, of Washington, insisted that it is only by the statistical method that a conclusion can be arrived at in determining the efficacy of the antitoxin-method of treatment. Laboratory-research is only suggestive; clinical observation must afford the demonstration. There is manifest impropriety in comparing with one another cases of different classes. For instance, those treated solely with the antitoxin and those with other measures alone or in conjunction with the antitoxin should be considered separately. Another important matter which time alone can determine is the influence of the treatment upon the epidemic occurrence and distribution of the disease. It is known that changes have taken place in the geographic distribution of diphtheria, which has grown less prevalent in the Northwest and has increased in the cities and towns of the East.

Dr. A. C. Abbott, of Philadelphia, insisted upon the importance of the bacteriologic investigation of diphtheria, pointing out that until this had been undertaken the clinical views upon the subject were in a most chaotic state. By this means also it has been possible to recognize the pathologic and biologic characters of the disease. Further, it has been shown that the non-diphtheric form is not so fatal in its termination as the diphtheric form.

Dr. F. H. Williams, of Boston, pointed out a possible danger from the early detachment of the membrane in the larynx, following the use of the antitoxin and the liability to cause obstruction. He cited a case in which such a contingency arose and was overcome by the administration of an emetic and expulsion of the membrane. Dr. Williams referred to the occurrence of swelling of the joints in the sequence of the antitoxin-treatment. He also exhibited a sterilizable syringe for making the injections. It is constructed of glass, and the piston is wrapped with asbestos-packing. The needle is attached through the intermediation of a bit of rubber-tubing, so that with a restless child there is no danger of breaking the glass. Other things being equal, the prognosis of a pseudo-membranous inflammation of the throat is more favorable when diphtheria-bacilli are not present. It is well to examine all of the throats in a household in which there is a case of diphtheria. Membrane may later form in cases in which at first there were no macroscopic evidences of disease.

Dr. William Osler, of Baltimore, reported five cases of membranous angina in which diphtheria-bacilli were found and which were successfully treated with the antitoxin. One case not treated with the antitoxin terminated fatally, and presented post mortem the lesions of chronic interstitial nephritis. In a case of follicular tonsillitis diphtheria-bacilli were found, and the antitoxin was employed with a favorable result. One case presented multiple infection, having a discharge from the nares, with the symptoms of coryza, a purulent discharge from the right ear, and membranous deposits upon both thumbs. The tonsils and larynx were red, but not swollen, and presented no membrane. In the various lesions diphtheria-bacilli were found, together with streptococci and staphylococci. In one case of diphtheria no membrane could be detected, but in cultures from the throat typical bacilli developed. Recovery ensued without the use of the antitoxin. In three cases of membranous angina the streptococcus pyogenes was found in two and the bacillus pyocyaneus in one, but no diphtheria-bacilli. Finally, from the throat of a case presenting redness and swelling of the throat and tonsils, with slight, passing elevation of temperature, but without membrane, a bacillus was isolated, resembling the diphtheria-organism, but being shorter and plumper, and staining irregularly and not acidifying litmus-bouillon, but alkalinizing it and growing much more profusely on ordinary media and inducing no reaction in inoculated guinea-pigs.

Dr. D. W. Prentiss, of Washington, presented a patient whose case he had reported to the Association six years before as one of purpura hæmorrhagica rheumatica, with bleeding from the bladder and the kidneys and other parts. For a year the face and legs have been swollen, and for five months the eyesight has been failing. Ophthalmoscopic examination disclosed the existence of degenerative changes in the retina of both eyes, with hemorrhages. The urine is clear, pale, amber, acid, of a specific gravity of 1005, and contains 25 per cent. of albumin, $\frac{1}{3}$ per cent. of urea, large and small granular casts, and epithelial casts. The association of purpura with nephritis is rare.

Dr. William Osler, of Baltimore, said that the case really belongs in the group described as Henoch's purpura, in which there is recurrence from year to year, with marked gastro-intestinal crises, arthritis, hemorrhage from the mucous surfaces, various cutaneous eruptions, not necessarily hemorrhagic, and acute nephritis. Dr. Osler has himself recorded one fatal case of this kind. The condition appears to be related to giant urticaria, and may occur through several generations of a family.

DR. CHARLES G. STOCKTON, of Buffalo, cited a case presenting hemorrhage into the retina repeatedly at intervals during five years, without other symptoms of purpura or arthritis. There was a condition of general ill-health, with gastric crises. Examination of the blood disclosed no peculiarity, and there were no symptoms referable to derangement of the function of the kidneys.

DR. J. G. ADAMI, of Montreal, read a paper entitled

A CASE OF MADURA FOOT (MYCETOMA PEDIS).

The case occurred in a French Canadian, twenty-one years of age, who had lived in America all his life, and in whom at the age of eleven years there appeared upon the foot a bluish spot that increased in size. An injury was followed by the escape of blood; then buttons of flesh formed on various parts of the foot, each of which proved to be constituted of a cutaneous overgrowth of low vitality around the opening of a sinus. In places there were also cicatrices. The foot was riddled by sinuses passing deeply in all directions, and the bones of the foot were carious. The muscles of the leg were wasted, and some of the ligaments had suffered destruction. The bones of the foot were in a condition of rarefying osteitis, and the member was removed by amputation. Recovery was complicated by pleurisy, but was eventually perfect. Examination of the discharge under the microscope disclosed appearances resembling those presented by actinomyces, than which, however, the bodies seen were larger. The case is believed to be one of the first authenticated cases of madura foot on the continent of America, if not the first, although the affection is not uncommon in India. It appears in two forms—the black and the white.

DR. W. P. NORTHRUP, of New York, read a paper entitled

GONORRHEAL ARTHRITIS—CLINICAL OBSERVATIONS.

He reported the case of a newborn infant that on the fourth day presented conjunctivitis, in the secretion of which gonococci were found. On the eleventh day, after exposure to wet, the mother was seized with inflammation of a single joint, complicated by erysipelas. There was no evidence of gonorrhea on the part of the mother, no gonococci could be found in the vaginal discharge, and no urethral threads in the urine of the father. In a second case a lad presented inflammation of the elbow, without a history of gonorrhea or of exposure to infection. There was, however, a history of rheumatism and exposure, and there was audible a basic murmur transmitted into the vessels of the neck. Antirheumatic remedies were without avail. Recovery ensued after rest, immobilization, and passive motion. A third case occurred in a man of twenty-eight, who had had gonorrhea two months previously, and for ten days presented swelling of the elbow, with sensitiveness. Antirheumatic remedies were employed without success, but recovery followed application of a plaster-dressing followed by passive motion. A fourth case occurred in a man of forty, with a history of rheumatism and of alcoholism, and of gonorrhea of seven weeks' standing. The right elbow was swollen, painful, and fluctuant. The treatment consisted in the application of ice-bags, of an open splint of plaster and steel bands, and was followed by recovery. A fifth case occurred in a man, twenty-seven years old, who had had gonorrhea two years and also five weeks previously to coming under observation. The knee-joint was inflamed and presented fluctuation. Nevertheless recovery ensued after treatment similar to that pursued in the remaining cases.

In this group of cases the prominent features were involvement of a single joint—elbow or knee—presenting a fusiform swelling indicating periarticular involvement, with synovial effusion, probably serous, which was soon absorbed, leaving no adhesions. The condition was attended with exquisite tenderness, with little local heat and little elevation of temperature (100° to 101°). The course of the affection covered an average period of four weeks, and recovery ensued with a perfect joint.

DR. WILLIAM H. WELCH, of Baltimore, stated that there are distinct types of gonorrheal arthritis, some serous, some suppurative. Bacteriologic examination of the fluid from the joints was at first attended with unsatisfactory results, but cultures were more successful. A case was cited in which, in the absence of a history of gonorrhea, swelling of the ankle-joint appeared. On incision, two of the tendon-sheaths were found distended with pus, cover-slip preparations of which disclosed the presence of diplococci having the general morphologic appearances of gonococci, and cultivation-observations confirmed the identity of the organism. Agar, to which has been added an extract of the fetal pig made with water, constitutes the most favorable medium for the cultivation of the gonococcus. So-called gonorrheal arthritis presents no pathognomonic pathologic anatomy. Small ecchymoses in the synovial membrane have frequently been noticed. A case was cited of a woman presenting the clinical aspect of malignant endocarditis. in which, after death, a vegetative endocarditis was found. Bacteriologic examination of the blood made several days before death disclosed the presence of organisms resembling gonococci, and typical gonococci were found in sections of a vegetation situated upon the mitral valve.

DR. F. C. SHATTUCK, of Boston, related that of 64 cases of gonorrheal synovitis observed at the Massachusetts General Hospital but 6 were monoarticular; two joints were involved in 4 cases, and 3 or more in 54. In 3 instances gonococci were cultivated from the blood obtained during life, and in one it was possible to communicate gonorrhea to a bitch with the culture. Reference was made to two fatal cases of endocarditis in association with gonorrheal synovitis. In one an autopsy was secured, and an old endocarditis was found, on which was grafted the ulcerative complication. Another case was referred to, presenting a urethral discharge, followed by the development of synovitis, in which gonococci were not found in the discharge.

DR. CHARLES CARY, of Buffalo, cited the case of a young man who presented inflammation of several joints, in conjunction with gonorrheal conjunctivitis, and in which it was believed that gonorrheal phlebitis developed. In a second case, occurring in a woman presenting a gonorrheal discharge, inflammation of the femoral vein was believed to have occurred. In neither case were cultures made.

DR. A. L. MASON, of Boston, stated that at the Boston City Hospital in only 25 per cent. of the cases of gonorrheal arthritis was a single joint involved. The effusion was in a large proportion of cases serous; in one case the serum was evacuated, and subsequently pus formed. Among 120 cases a post-mortem examination was made in but one, and that has been reported by Councilman as one of gonorrheal myocarditis. In another case death resulted from myocarditis. In a few cases bacteriologic examinations were made and proved of aid. In a case in which the hip-joint was involved and unattended with urethral discharge gonococci were found in the blood.

DR. J. WEST ROOSEVELT, of New York, reported that of 10 cases in only 1 was the inflammation confined to but one joint. The arthritis of gonorrhea is more chronic and less yielding than that of rheumatism.

DR. WILLIAM OSLER, of Baltimore, stated that at the Johns Hopkins Hospital there had been 27 cases of gonorrheal arthritis, in 5 of which the joint was opened. In 4 sero-hemorrhagic fluid was found, and in but 1 pus.

DR. NORTHRUP, in concluding, added one more case to his list. This occurred in a woman, forty-five years of age, who was annoyed by a watery discharge from the vagina of three weeks' duration. There was exquisite sensitiveness of the vulva, vagina, and the neck of the uterus, and the uterus was enlarged. On examination a discharge of ropy pus was also found, and in this gonococci were detected. The cervix was swollen and edematous. Although the woman presented an appearance of profound illness she had little elevation of temperature.

DR. A. JACOBI, of New York City, reported a case of

HYPERTHERMY UP TO 65° C. (148° F.).

This occurred in a profoundly hysterical fireman, who suffered a rather severe injury, as the result of a fall between the revolving rods of some machinery, and was rendered unconscious for four days. Thereafter he complained of various pains, bloody expectoration, and had convulsions at varying intervals, with loss of consciousness, rapid respiration, unaccelerated pulse, and excessively high temperature, the last, on one occasion, reaching the height of 148° F. The temperature was taken carefully in the presence of a number of persons, and all possible precautions were observed to prevent deception. The thermometer was variously placed in the mouth, anus, axilla, popliteal space, groin, urethra, and different instruments were from time to time employed. The behavior of the patient was much influenced by attention and by suggestion. For a period of five days the temperature averaged continuously between 120° and 125° F.

DR. WILLIAM H. WELCH, of Baltimore, referred to a case that had been reported in which it was said that the temperature reached as high as 171° F. These extraordinary elevations of temperature appear physically impossible, particularly when long continued, as they are fatal to the life of the animal cell.

DR. F. C. SHATTUCK, of Boston, cited a case in which he had observed a temperature of 117° F.; every precaution had been taken to prevent fraud or deception. The patient was an hysterical young woman.

DR. M. H. FUSSELL, of Philadelphia, reported the case of a man who was clearly a malingerer, and who presented a temperature of 115° in the mouth or in the rectum, and a normal temperature in the axilla.

DR. JACOBI insisted that his observations had been made with the greatest care and all precautions and under many different conditions. He had at first viewed the case with skepticism, but he could not doubt the results of his observations. That we cannot explain anomalies of this kind constitutes no reason why we should deny their occurrence.

The report of the Treasurer was at this stage presented and referred to Drs. Musser and Dock as a committee to audit it, and who later reported its accuracy.

DR. JOHN GUITÈRAS, of Philadelphia, read a paper entitled

SOME OBSERVATIONS OF THE SPLEEN AND MARROW IN LEUKEMIA.

He reported the case of a man aged fifty-five years, terminating fatally, and in which during life a diagnosis of splenic and myelogenic leukemia had been made, and after death anemia, hyperplasia of the spleen, lymphoid marrow in the bones, lymphoid infiltration of the liver and kidney were found. He observed a peculiar mode of cytogenesis in a large number of splenic capillaries, the erythroblast outside the epithelial wall giving off by budding a red corpuscle which is nucleated.

DR. F. H. WILLIAMS, of Boston, read a paper entitled

A COMFORTABLE WAY OF USING COLD IN FEVERS.

This consists in enveloping the patient in gauze which is saturated with cool or cold water, and the evaporation of which is hastened by fanning either by hand or, preferably, by means of a motor. In this way a considerable reduction in temperature can be effected in a short time. Some reduction may be effected even with warm water, and perhaps the best result is obtained from the alternate use of heat and cold.

DR. GEORGE DOCK, of Ann Arbor, read a paper entitled

GOITER IN MICHIGAN,

which will appear in a subsequent number of the THE MEDICAL NEWS.

DR. H. M. HURD, of Baltimore, related that in certain parts of Canada a large increase of goiter has taken place from local influences, particularly a change in the drinking-water.

DR. WILLIAM OSLER, of Baltimore, related that in some regions in which goiter was very prevalent it has now almost entirely disappeared, and it has, on the other hand, appeared in other places in which formerly it did not prevail.

DR. J. E. GRAHAM, of Toronto, read a paper entitled

DISPLACEMENTS OF THE LIVER.

He stated that these may occur from influences outside the liver and its attachments, such as tumors, abscesses, and the like, as well as from stretching or relaxation or undue length of the ligaments from any cause. The condition is not uncommon in women with pendulous abdomens, who have borne many children. A distinction is to be made between floating liver and merely movable liver. Dr. Graham reported the case of a woman, sixty-two years old, who had borne ten children, and presented cyanosis, dyspnea, dilatation of the right heart, and emphysema. The liver was displaced downward, but could be replaced when the patient assumed the recumbent posture, and could be retained in place by the use of a bandage. In a second case, a man thirty-five years old, the liver was displaced by a subphrenic abscess. There existed also pyloric obstruction and gastrectasis. The liver lay obliquely in front of the stomach. In a third case, in a boy, the front wheel of a wagon had passed over the trunk, fracturing the seventh and eighth ribs. For a time a considerable area of dulness was found upon the left side, while the normal area of hepatic dulness could not be detected, so that the question arose whether the liver was originally displaced and an inflammatory process had taken place in the right hypochondrium, or if the liver was merely hidden under the diaphragm, and an inflammatory process had taken place about the spleen. The paper contained a tabulated statement of thirty published cases of displacement of the liver.

Dr. M. H. Fussell, of Philadelphia, read a paper entitled

CARCINOMA OF THE LIVER, WITH CIRRHOSIS,

and presented two interesting specimens and microscopic sections. He detailed the account of an Italian, forty years old, who presented symptoms of hypertrophic cirrhosis of the liver, but in which, after death, although the liver was found to be enlarged, it was also studded with minute nodules and presented a peculiar reddish-white color. In microscopic sections the intermingling of cirrhosis and carcinoma was distinctly shown. The second case occurred in a girl sixteen years old, who during life had been treated for chlorosis, and died suddenly of pneumonia. The liver presented a reddish-white appearance and was firm and granular. The spleen was enlarged. Upon microscopic examination sections of the liver presented an increased amount of connective tissue and proliferation of the biliary ducts and appearances suggesting an early stage of carcinomatous change.

Dr. J. G. Adami, of Montreal, related that he had already placed on record a case almost like the first reported, and presenting the same macroscopic and microscopic appearances.

A paper by Dr. S. C. Busey, of Washington, entitled

EPIDEMICS OF TYPHOID FEVER, SCARLET FEVER, AND DIPHTHERIA DUE TO MILK-INFECTION,

was read by title.

Dr. S. J. Meltzer, of New York, read a paper entitled

ON THE DIRECT FARADIZATION OF THE MUCOUS MEMBRANE OF THE STOMACH AND INTESTINES OF ANIMALS (DOGS, CATS, AND RABBITS).

He had found that in dogs, cats, and rabbits the mucous membrane of the digestive canal offers a considerable resistance to the penetration of the faradic current to the muscular coat; the greatest resistance is found in the mucous membrane of the stomach. The percutaneous and the direct faradization of the stomach or the intestines cannot produce contraction in these parts.

Dr. C. G. Stockton, of Buffalo, expressed gratification that these observations seemed to confirm some made by him and reported several years ago. Although confident that intragastric electrization was capable of influencing peristalsis and secretion, he was unable experimentally to induce in animals contraction of the stomach by direct application of the electrodes to the exposed stomach.

Dr. A. Jacobi, of New York City, stated that he had faithfully and persistently employed electricity in the treatment of chronic constipation and in conditions of dilatation and atony of the colon, but had failed to obtain encouraging results.

Dr. Meltzer added that his experiments had shown the danger of stimulating the bowel by electricity with one electrode introduced into the rectum and the other placed upon the abdomen.

Dr. W. P. Northrup, of New York City, read a communication entitled

FORCIBLE ARTIFICIAL RESPIRATION—FELL–O'DWYER APPARATUS—CASES.

The apparatus consists essentially of a bellows, to be worked by foot and connected by means of rubber-tubing with a hard-rubber tube for introduction into the larynx. By this means air can be forced into the lungs rhythmically, with ordinary respiratory frequency and at the will of the operator. He cited a case of opium-poisoning in which, by alternate artificial respiration with the apparatus exhibited and washing out of the stomach, death was averted.

The following officers were elected for the ensuing year: *President*—Dr. A. Jacobi. *Vice-President*—Dr. J. M. Da Costa. *Secretary*—Dr. Henry Hun. *Treasurer*—Dr. W. W. Johnston. *Recorder*—Dr. I. M. Hays. *Council*—Dr. George B. Shattuck. *Representative on Executive Committee*—Dr. William Osler. *Alternate*—Dr. M. A. Starr.

The following new members were elected: Dr. Henri A. Lafleur, of Montreal; Dr. Ira T. Van Gieson, of New York; Dr. Simon Flexner, of Baltimore; Dr. W. E. Fischel, of St. Louis; Dr. Frank Billings, of Chicago.

AMERICAN GYNECOLOGICAL SOCIETY.

Twentieth Annual Meeting, held in Baltimore, May 28, 29, and 30, 1895.

The meeting was opened with a paper by Dr. Howard A. Kelly, of Baltimore, on

RECENT URETERAL EXPERIENCE.

The various instruments which he has devised for the inspection of the bladder and the sounding of the ureters were exhibited and the value of such operations explained. Experience in this line of work was thought especially useful in the detection of various forms of disease connected with the renal pelvis, with stricture and abscess and dilatation of the ureters, and with certain inflammatory and other morbid conditions of the bladder and urethra, and as a means of differential diagnosis in various forms of disease in the abdominal cavity.

The paper was discussed by numerous gentlemen, the principal point developed being that to sound the ureters satisfactorily a strong light must be reflected into the bladder by the cystoscope. Without it the work would be unsatisfactory or even impossible.

Dr. S. C. Gordon, of Portland, Me., read a paper on

HYSTERECTOMY FOR UTERINE FIBROIDS.

He referred to his advocacy of this operation three years ago before the American Medical Association, and again before the meeting of the American Gynecological Society two years ago. He believed that it is good practice to remove all uteri affected with fibroid tumors, no matter what their size might be, if they offered any probability of reducing the patient to a condition of invalidism. The difficulties of the operation are often due to delay in doing it, hence it is advisable that it be performed early in the history of the growth. The chief danger from the operation is from the loss of blood, which is practically the cause of shock. The well-known symptoms possible with such tumors were described. Dr. Gordon also laid stress upon the use of catgut as a suture-material, which he uses for all purposes except the suture of the abdominal wound.

Dr. Thomas Addis Emmet, of New York, read a paper on

THE USE OF TRACTION AND MORCELLATION FOR THE REMOVAL OF FIBROIDS.

He had practised this method for many years; his remarks were limited to the removal of submucous and interstitial fibroids of the uterus. He believed that the operation of hysterectomy is greatly abused, and earnestly urged that palliative measures should first be tried. If hemorrhage is the prominent symptom, it can usually be checked without resorting to the removal of the uterus. The subsequent history of women who had been subjected to hysterectomy would show a large number of invalids, though they might have a different series of symptoms from those for which the operation was performed. For himself he would not feel justified in removing the uterus for fibroid tumor except with the view of saving life. He was aware that the developmental history of such tumors differed materially. If the development were rapid, there should be no hesitation in removing the organ. He thought the tendency to deny that retrogressive changes of a benign character frequently followed the menopause was not based upon fact. With regard to the removal of the growth by traction it was comparable to removing a substance from a mass of India-rubber, the latter contracting as the substance was removed. The use of ergot in the treatment of such tumors was condemned. The traction should in some cases be direct and in others lateral or rotatory, according to the resistance offered. If the density of the tumor were greater than that of the uterus, the operation would be thereby facilitated. In other cases, the tissue being similar to the structure of the uterus, its removal was sometimes followed by sloughing and sepsis. Dilatation preliminary to the operation on the uterine canal was a necessity. If sponge-tents could be aseptically prepared, they would furnish an ideal dilating agent. He had observed that multiparous women suffered from fibroid tumors to a greater extent than those who had not borne children, and that the growths were frequently modified in the course of gestation.

The discussion of the two foregoing papers, which was long and animated, was opened by Dr. W. M. Polk, of New York. He differed with Dr. Emmet in regard to his views of the significance of fibroid tumors. It is possible that in the majority of cases bad symptoms do not occur, but they certainly do occur in many cases. If the treatment of this condition by hysterectomy had led to mistakes, it is but the history of every great surgical procedure which had ever been advocated. Personally he was much in favor of attacking these tumors by the vaginal route, though not in all cases. He urged upon all operators a careful consideration of that method.

Dr. J. M. Baldy, of Philadelphia, thought that the objectionable symptoms following hysterectomy, which had been alluded to, were usually quite susceptible of relief. If an operation upon a fibroid tumor were delayed, it sometimes happened that removal was rendered impossible.

Dr. P. F. Mundé, of New York, stood by the statements which he had made in the past, that the uterus should not be removed unless the conditions indicating it were of sufficient gravity.

Dr. Sutton, of Pittsburg, thought it important in considering the question at issue to remember that the indications and the possible results vary according as the tumor to be removed was a myoma or a fibroma, the life-conditions of the two forms of growth being entirely different. The social condition of the woman was also an important factor, a woman who was dependent upon her own exertions for a living often requiring an operation, which might be deferred when the surroundings were less exacting.

Dr. Montgomery, of Philadelphia, believed that the truth as to the desirability and necessity of operating upon fibroid tumors lay between the two extremes which had been enunciated in the respective papers.

Dr. Engelmann, of St. Louis, Mo., believed that all methods of treating fibroid tumors could show a percentage of cures. No method was perfect and none was entirely without merit.

Dr. Goffe, of New York, thought it important to consider the age of a patient in relation to a possible operation. Those who were near the age of the menopause would offer the best chances of success, other things being equal.

Dr. A. MacLaren, of St. Paul, Minn., read a brief paper on

THE LIGATION OF THE PEDICLE WITH CATGUT.

His plea was for the innocuousness of catgut if it were properly prepared. The method which he advocated is by steam and dry sterilizing, a sufficiently high temperature being used and sufficiently long to destroy germs, but also without making the substance brittle. Infection by means of silk ligature-material was not uncommon, even though the material were aseptic when applied to the tissues. In non-suppurative cases he had met with no mishap from using catgut prepared by the method advocated.

Dr. A. Lapthorn Smith, of Montreal, Can., narrated his experience with

VENTRO-FIXATION AND ALEXANDER'S OPERATION.

The latter method is not adapted to cases in which adhesions were present. In other cases it is safe and useful. Accidents that are possible after its use are hernia and suppuration, and even death has been known to result. Inability to find the round ligaments is not an uncommon mishap, even with experienced operators.

Ventro-fixation might be a serious operation if pyosalpinx be present. It might be so performed as not to interfere with a coexistent pregnancy. In performing this operation he is accustomed to scarify a small area of peritoneal surface, which is to be attached to the parietal peritoneum, and then introduce two sutures which are to be left permanently.

There followed a paper by DR. C. CLEVELAND, of New York, on

ALEXANDER'S OPERATION,

which he thought one of the most beneficent ever devised. It is indeed sometimes difficult to find the round ligaments, especially for beginners. The operation is practically without danger. It might usually be done with safety upon the pregnant woman. After parturition an examination should always be made of those who have been subjected to this operation, and it may be necessary to support the uterus for a few weeks with a pessary. The charge that the operation is unscientific is groundless, as the uterus is placed in a position which is anatomically correct. Unsuccessful operations are usually due to imperfect technique. It is desirable that a beginner should first perform the operation upon the cadaver. At least four inches of the ligaments should, as a rule, be drawn out and cut off, or secured under the skin, according to the operator's fancy. Too many stitches should not be carried through the stump which remains or its vitality may be destroyed.

The discussion on the two foregoing papers was opened by DR. F. H. DAVENPORT, of Boston, Mass. The question of the propriety of one or the other of these operations was, he said, not under discussion. The indications for them are limited. The relief obtained by them, in many cases at least, is limited, and could be obtained as well with a pessary. Ventro-fixation seemed to him the preferable operation of the two, especially if adhesions bound the retroflexed uterus down. The pathologic condition is not invariably due to a laxity of the round ligaments, but to a lesion of the cervix or the broad or utero-sacral ligaments. The round ligaments are not usually strong enough to sustain the weight of the uterus if it were very much enlarged. The operation recently recommended of vagino-fixation might solve the problem which is imperfectly solved by the other two.

DR. VAN DE WARKER, of Syracuse, N. Y., thought the use of the stem pessary would obviate many of the operations now performed for retroflexion. He thought the principle of Alexander's operation unscientific. It did not hold the uterus in anteversion.

DR. COE, of New York, said that Alexander's operation was not intended to suspend the uterus, and hence the operation was not adapted for cases of prolapse. In suitable cases of retroflexion it does bring the uterus sufficiently forward to enable it to functionate properly. It was also a means for the relief of prolapse of the ovaries.

DR. T. A. EMMET said it is the prolapse of the uterus with the disturbance of its bloodvessels, especially the veins, which is the cause of trouble in retroflexed uteri, not the retroflexion *per se*, which is only a symptom. Alexander's operation would not remove the source of the trouble, while ventro-fixation is still less scientific and only guesswork.

DR. W. M. POLK, of New York, declared that the results of these operations, not theories as to the causes of the lesions, should be the test of their value. Alexander's operation had well stood that test. It might be preceded by vaginal incision in cases in which adhesions were present, the adhesions being broken up with the finger, Alexander's operation then being done in preference to ventro-fixation.

DR. J. M. BALDY preferred ventro-fixation to Alexander's operation, since it gave one an opportunity to determine positively whether adhesions were present. They were frequently present when unsuspected.

DR. EDEBOHLS, of New York, discussed Alexander's operation compared with operations on or in the vagina for the relief of uterine displacements. He had performed Freund's operation five times in the last fifteen months with three successes. In Alexander's operation it is true that the round ligament did not always run through the inguinal canal. In two cases he had traced its course upward and outward from the internal ring to its distribution between the external and internal oblique muscles.

DR. J. M. BALDY, of Philadelphia, read a paper on

ABDOMINAL SECTION FOR PUERPERAL SEPTICEMIA.

Cases were narrated in which either the uterus or the appendages, or both, had been removed early in the history of puerperal septicemia, with satisfactory results. If an operation is to be done, it should be within the first week after confinement, especially if the tubes were infected and if the uterus were to be removed. If there were no pus, or if the diagnosis were doubtful, it might be warrantable to delay the operation until the symptoms became more definite. If an operation is done in the presence of general peritonitis, the operation would almost certainly be fatal. In general, the more localized the lesion, and the earlier the operation, the better will be the result. It is not easy to determine when septic saturation has occurred. If hysterectomy is to be performed, it should be within a week after confinement. Nineteen hysterectomies had been reported, seven of them being successful.

DR. F. HENROTIN, of Chicago, advocated a conservative course in the treatment of puerperal septicemia.

DR. W. G. WYLIE, of New York, spoke of the difficulties of diagnosis in this disease. If peritonitis were general, incision of the vagina, with drainage, would in some cases result successfully. In the early stages of the disease irrigation of the uterus every hour would check its progress.

DR. A. F. CURRIER, of New York, excluded from consideration at that time two classes of cases—those in which septic peritonitis was general and those in which the inflammatory products were extra-peritoneal. In the former he believed an abdominal section would always result fatally, in spite of published reports to the contrary; in the latter the same operation would usually be successful. The remaining cases included mainly those in which the uterus and adnexa were involved, with or without suppuration. As a rule, these cases were not seen by the gynecologist until after the first week, and to add the shock of an operation to the already greatly prostrated condition offered little hope of success, especially if the uterus were to be removed. Vaginal incision, or even vaginal hysterectomy, might succeed in some cases, with the superior opportunity which it gives for drainage. It must be remembered that a certain percentage of cases would get well anyway, if left alone, without operation.

DR. C. P. NOBLE, of Philadelphia, thought hysterectomy offered prospects of success if performed very early. The longer it is delayed the less hopeful would the operation be.

Dr. A. L. Smith, of Montreal, Canada, believed that the gynecologist is powerless in general peritonitis. When infection through the uterus is beginning it might be warrantable to bring the uterus and adnexa out, and secure them outside the wound with a *serre-nœud*, without removing them at once, thus saving time and possibly shock. He had so operated with success in one case.

The address of the President, Dr. M. D. Mann, of Buffalo, reviewed the condition of a large number of women with whom neurasthenia is probably more potent as a cause of illness than pelvic disease. With such women the condition of the kidneys is an important matter for consideration. While not seriously diseased, they are functionally defective. The matter of dress-reform also occupied a large share of his attention, the necessity for hygienic changes in this respect being considered very great.

Dr. J. H. Etheridge, of Chicago, read a paper entitled

RENAL INSUFFICIENCY IN GYNECOLOGICAL CASES.

This condition is observable in many cases, though there might be no serious renal lesion. Retention of urine is followed by absorption of poisons with general intoxication, especially with retention of urea and the development of pleurisy and other diseases. A table of the urinary solids excreted by normal women of given weights had been calculated, from which abnormal excretions could be deduced. If less than seven-hundred grains of urinary solids were discharged per diem, it could be assumed that some abnormal process was present or was developing.

Dr. A. J. C. Skene, of Brooklyn, thought that an oversight of the general conditions in women who were to be subjected to operation is not infrequently the cause of bad results. Deranged nutrition and innervation are frequently the cause of bad symptoms in women rather than a slight degree of pelvic disease.

Dr. H. A. Kelly, of Baltimore, illustrated the relation of renal insufficiency to the conditions which followed operations on the pelvic organs by a graphic diagram prepared from the post-operative history of twenty-one of his own cases. In this diagram it was seen that the volume of urine diminished to one-third its ordinary volume the day after the operation, then remained nearly constant for three days, and gradually increased to the normal by the tenth day. The volume of urinary solids remained practically the same, though the specific gravity of the urine was increased.

Dr. W. E. Ford, of Utica, N. Y., thought the changes in the renal functions which were supposed to be due to pelvic disease are often attributable to nervous or emotional causes.

Dr. Baldy believed that pelvic disease is usually the source of neurasthenia and renal disease in the cases under discussion.

Dr. Wylie recommended the free use of hot water by the rectum during or after operation as a preventive of shock and renal disturbance.

Dr. Bache Emmet, of New York, was in favor of careful supervision of the renal functions prior to operations.

Dr. A. L. Smith favored the use of large quantities of water by the mouth and rectum to wash out the excrementitious material with the urine.

Dr. Charles Jacobs, of Brussels, Belgium, read a paper on

TOTAL EXTIRPATION OF THE UTERUS BY THE VAGINAL ROUTE.

He presented a table of four-hundred-and-three cases in which he had operated, with twelve deaths. The indications for the operation are carcinoma, fibroid tumor, extra-uterine pregnancy, suppurative disease of the appendages, non-suppurative disease of the appendages, prolapse of the uterus and vagina, and disease of the uterus following abdominal operations. Tables of cases for the various indications were given. The indications in some cases were relative and not absolute, especially with the prolapsus. Of the accidents that followed the operation, there were fistulæ in nine cases, five of them intestinal, three vesical, and one ureteral. The importance of suitable instruments for the vaginal operation is supreme, especially instruments for hemostasis. In twenty-one cases it had been impossible to remove all the diseased tissue, but no bad result followed such incomplete operations.

Dr. W. H. Wathen, of Louisville, Ky., read a paper on

VAGINAL HYSTERECTOMY FOR UTERINE MYOMATA AND DISEASES OF THE ADNEXA; ALSO FOR CYSTIC AND SOLID TUMORS OF THE UTERUS.

Extracts from personal communications from Péan and Richelot were read advocating the operation on the basis of their extensive and successful experience. It is always possible to complete this operation by abdominal incision if the vaginal route prove impracticable. The technical difficulties by the vaginal method are not greater than in the severer cases by the abdominal, and the drainage is better. The arguments for the removal of the uterus in those cases in which the adnexa required removal are greater rapidity of recovery, freedom from suppuration and hernia, and a lower mortality-rate. Success depends on the use of suitable instruments, on not wounding the viscera, and in preventing hemorrhage.

Dr. F. Henrotin, of Chicago, read a paper on

THE CONSERVATIVE SURGICAL TREATMENT OF SEPTIC PELVIC DISEASE.

He believes there is too much surgery of the female pelvic organs, though he is not in favor of retaining the uterus if the adnexa require removal, on the ground that the cure would be more complete and that the time for sentiment had passed with the removal of the ovaries. He believes that the drainage of collections of pus in the uterus, tubes, and parametrium could usually be effected without the performance of a serious operation. His proposition consists in making a horizontal incision high up on the posterior wall of the *portio vaginalis*, then a vertical incision backward from its middle point, and through this opening to insert the finger, pushing it upward between the layers of the broad ligament, thus palpating the entire area in which pelvic disease usually began. Evil consequences could thus be anticipated, abscesses could be broken up, also masses of induration.

The time to cure pelvic disease is in its early stages. The art of the future would consist in accurate diagnosis and early treatment.

Dr. R. S. Sutton, of Pittsburg, exhibited specimens of uteri with tumors attached, some of which had been removed by vaginal and others by abdominal incision. In two there was pregnancy at the third month. In several malignant disease was discovered after the removal of the uterus.

Dr. Montgomery, of Philadelphia, opened the discussion on the foregoing papers. He thought the statistics which had been narrated show the superiority of vaginal over abdominal hysterectomy. It is also of great value for diagnostic purposes. For ectopic gestation he would still prefer the abdominal route, also in some cases for fibroid tumors of the uterus.

Dr. Baldy thought the objections to the scar and to the possibility of hernia after abdominal hysterectomy are valid, but he would not consider it prudent in any case to allow a patient to get up from her bed within a week after operation, as had been frequently reported after vaginal hysterectomy. He believed that the difficulties and dangers of the vaginal are greater than those of the abdominal operation ; it would frequently be impossible to complete the vaginal operation, and it requires a longer time for its performance. What could be done safely by the vagina could be done with equal safety by the abdomen.

Dr. Polk admitted that those who are skilful in abdominal work could best do the vaginal operation. The latter is certainly the more difficult. The simple vaginal incision which had been advocated is a most valuable suggestion, and would do away with much of the prolonged treatment of pelvic disease. An incision on the anterior vaginal wall would prove more serviceable in many cases than one on the posterior wall. Especially would it better enable one to examine the condition of the ovaries and tubes.

Dr. Gordon is not favorably impressed with the plan of operating from below. He prefers the route which enables him to see as well as to touch the diseased tissues.

Dr. Wylie believes that routine practice is not desirable by either method. The conditions present should determine the method of treatment. The vaginal method is certainly the more difficult if the adhesions are high up. The question as to the proper route for removing the uterus is by no means settled.

Dr. J. E. Janvrin, of New York, thinks that with reference to removal of the uterus for carcinoma the vaginal route is preferable. If it could not be so removed, its removal is not usually indicated.

Dr. McMonigal, of San Francisco, Cal., is not in favor of removing the uterus and tubes if there is merely inflammation without suppuration. As to the vaginal method, it would be difficult to induce those to change who were already securing satisfactory results by the abdominal method.

Dr. W. T. Lusk, of New York, referred to the question of tubal pregnancy in its relation to vaginal hysterectomy, and reminded his hearers that the uterus and the unimpregnated tube are frequently healthy, and it would therefore be unjust to remove them. It should not be forgotten that in changing from the abdominal to the vaginal method patients are being exposed by the operators to greater risk to life while the method was being learned.

Dr. T. A. Reamy, of Cincinnati, O., read a paper on

THE TREATMENT OF PUERPERAL ECLAMPSIA.

Notes of a series of cases were read in which various methods of treatment were used, but that upon which greatest stress was laid consisted in the use of large doses of tincture of veratrum viride, either hypodermically or by the mouth. With Dr. Reamy such treatment had been almost universally successful.

Dr. E. P. Davis, of Philadelphia, read a paper on

THE PROPHYLAXIS AND TREATMENT OF ECLAMPSIA.

He considered mania and toxemia among the important precursors of eclampsia. The latter is due to imperfect renal function with retention of urinary solids. Patients with impending eclampsia also showed malaise and feeble pulse. With rest and increased urinary excretion it would be probable that the eclampsia was being averted. Sedatives and laxatives were indicated as medicinal measures ; also the rapid emptying of the uterus at the earliest possible moment. Such cases emphasized the necessity of studying the condition of pregnant women before the period of gestation was terminated.

Dr. Lusk believed that with puerperal eclampsia the uterus should be emptied as soon as possible. It is also desirable that the anesthesia should not be prolonged. This method is preferable to the use of drugs of whatever character. Dürhssen's plan of deeply incising the cervix to favor dilatation is sometimes useful in hastening the delivery. Kreatin and kreatinin are now believed to be the agents that cause the convulsions.

Dr. A. L. Smith thought that in addition to the early emptying of the uterus it is well also to use chloral by the rectum, then anesthetizing with the A.-C.-E. mixture. Subsequently he would stimulate the kidneys and skin with large drafts of water.

Dr. Engelmann laid stress upon the value of great care of the pregnant woman during the early months.

Dr. Mann also favored the stimulation of the kidneys with an abundance of water. He had also had very satisfactory experience with veratrum viride.

Dr. W. E. Ford, of Utica, N. Y., read a paper on

THE ULTIMATE RESULTS OF TRACHELORRHAPHY.

Much had been written concerning the influence of trachelorrhaphy upon nervous disease. His idea is that reflex nervous disease produced by a lacerated cervix is a very vague term. The pains in parts of the body remote from the lesion are not reflected but transferred. Nervous disease is improved by trachelorrhaphy only because the general health is improved, and it is an observed fact that in some cases of nervous disease the patients become worse after the operation. That pronounced relief to nervous disease follows the operation is not often justified by facts. In 136 cases in which he had studied the remote results they had been disappointing in the majority of cases. Recoveries from neurasthenia were not more frequent than in an equal number of cases in which no operation had been performed.

Dr. Cleveland thought that mistakes are often made in trachelorrhaphy by removing only the indurated tissue in the angles of the lacerations. If there is cystic degeneration, the degenerated tissue should also be removed, and it would in some cases be better to amputate the entire *portio vaginalis.*

Dr. Engelmann did not agree with the statements made concerning reflexes; he thought reflex neuroses certainly proceed from uterine lesions. He also thought that amputation is frequently preferable to trachelorrhaphy.

Dr. Currier thought that the results of trachelorrhaphy would be governed by the condition for which the operation was performed. In one class of cases the lesion is mainly emotional, and it is a matter for each one to decide whether he would operate upon such cases. In the other class of cases these is morbid tissue which acts as a focus of irritation. Removing this tissue removes the focus of irritation, improves the nutrition of the tissues, and tends to produce remote effects upon other morbid conditions of the body.

Dr. A. P. Dudley seldom found the operation necessary now, the patient's condition being usually susceptible of relief by other measures.

Dr. Gordon thought that dilatation and curettage usually obviated the necessity of trachelorrhaphy. He had practically abandoned it.

Dr. George Harrison, of New York, believed the operation was one of the most beneficent, though it was often abused.

Dr. Holmes, of Portland, Ore., thought that even small lacerations had so decided an effect upon nutrition that their operative treatment was frequently of great benefit.

CORRESPONDENCE.

THIRTIETH ANNUAL MEETING OF THE MICHIGAN STATE MEDICAL SOCIETY.

The Michigan State Medical Society held its thirtieth annual meeting in Bay City, Mich., June 6 and 7, 1895, under the presidency of Dr. H. O. Walker.

The attendance was representative in character and equal to the average in numbers. The local committee had made abundant provision for the convenience of the members, and with tireless endeavor promoted cordial good-will, so that the meeting was without friction in any respect.

It was gratifying to have its committee report the enactment by the State Legislature of a law to prevent blindness by compelling attention to the purulent ophthalmia of the newborn. But it was sadly disappointing to learn from other committees that the bill to regulate the practice of medicine failed to become a law after the manner of many previous attempts, and that the bill to secure a registration of births and deaths in accordance with a common-sense method had also failed to become a law. Michigan, by deliberate act of its Legislature, still remains the dumping-ground of the world's incompetent and dishonest doctors. It made a notable change in its requirements for membership in that it admitted two physicians whose entire medical education was obtained in homeopathic medical colleges. It was stated by a member upon the floor of the House that such action was contrary to the code of ethics, so that the action was taken deliberately and with full knowledge of the facts. Thus this Society "drifts" from its old-time allegiance, a fact more noteworthy in that last year it refused to entertain the idea of changing the code of ethics in any particular.

The scientific work of the Society is done in three sections. These were all well attended, the papers of scientific and practical interest and intelligently discussed. As the papers numbered fifty, it will be apparent that the sessions of two days and one night were needful in order that the work be accomplished.

The arrangement of the first session of each of the sections was peculiar in that it was devoted to the consideration of a series of papers discussing different phases of a single topic; thus the surgical section discussed urethral surgery; the medical section, diphtheria and its antitoxin; the gynecologic section, malignant diseases of the uterus. The papers prepared for these several discussions were of unusual merit. The remaining sessions of the sections were devoted to papers on widely diverse subjects, usually embodying original studies or original research, and of such general attraction as to hold the members in attendance till time for final adjournment. Since the organization of these sections this Society has been singularly free from disagreeable "wire-pulling" and disagreeable episodes. Among the reasons for this delightful change from former days are:

1. There is nearly four times the amount of work called for, which engages at least four times as many physicians. This consumes the surplus energy, so that less is left for less useful purposes.

2. There are four times as many officers, so that the desire for office-holding is more largely appeased, and hence the diminished struggle for such positions.

3. An atmosphere of scientific study and work is created of far greater intensity, and this represses much that is undesirable and which was associated with the old style medical convention.

4. Engaged in actual work constantly to a number threefold more than formerly, the members have found a pleasure and satisfaction hitherto unknown.

5. Each member had a chance to select one of three papers or discussions at any time during the meetings—so that he had a chance to select topics hitherto unavailable.

6. The papers have become more scientific, and were prepared with greater care, because the selected audience had a chance to criticise more intelligently, and by its very selectness was better able to criticise.

It must be admitted that this new state of things is unsatisfactory to the friends of the old medical convention. These prefer a chance to talk to a large crowd—to have a less discriminating audience, to shut off others from a chance to learn the art of public speaking in medical societies. They do not enjoy the highest grade of scientific work. However, it is hoped by the majority of thoughtful workers in the Michigan medical profession that the present system may be continued and perfected.

Mount Clemens was selected as the next place of meeting, and the first Thursday in June, 1896, as the date for holding the same. The newly elected officers are as follows: President, Victor C. Vaughan, Ann Arbor; First Vice President, Hugh McColl, Lapeer; Second Vice President, R. W. Erwin, Bay City; Third Vice President, F. B. Tibals, Detroit; Fourth Vice President, F. G. Novy, Ann Arbor; Secretary, C. H. Johnson, Grand Rapids; Treasurer, W. G. Henry, Detroit; Members of the Judicial Council, H. B. Baker, Lansing; Francis A. Rutherford, Grand Rapids, and W. T. Dodge, Big Rapids.

The officers of the sections are: Medicine: Chairman, David F. Stowe, Bay City; Secretary, A. P. Biddle, Detroit; Orator, H. M. King, Grand Rapids.

Surgery: Chairman, D. M. Greene, Grand Rapids; Secretary, A. F. Bulson, Jackson; Orator, C. H. Baker, Bay City, Mich.

Gynecology: Chairman, F. G. Minor, Bay City; Secretary, J. B. Winnery, Grand Rapids; Orator, Reuben Peterson, Grand Rapids.

REMARKS ON A RECENT SURGICAL FAD.

Castration for Hypertrophy of the Prostate.

To the Editor of THE MEDICAL NEWS,

SIR: Every now and then the medical profession has brought to its notice a new operative procedure for the relief of obstinate surgical diseases of various kinds, and long before it has been fairly tested it often becomes more or less of a surgical craze. Let the sanction of high surgical authority be ever so lukewarm, the rank and file of the profession seem to tumble over each other in their efforts to be the first to present a series of operations involving the new procedure. The oöphorectomy-craze is on the wane, but it is still worthy of attention. The adoption of a surgical fad is dangerous in proportion to its simplicity and ease of performance, and it is by no means surprising that the new operation that has been suggested for hypertrophy of the prostate should be adopted by so many men of limited surgical experience. Castration is an operation so easy of performance, and so stubborn an affection is hypertrophy of the prostate, that the temptation to perform the operation—especially in view of the encouraging reports that have been published—is naturally great. I do not propose to quarrel with the accuracy of the experiments or the conclusions of my distinguished *confrère*, Dr. J. William White, of Philadelphia, who a short time since gave the results of his experimentations on dogs, and made the suggestion of the possible beneficial results that might be obtained from castration in enlarged prostate in the human subject. The avidity with which certain surgeons seized upon the straw held out to them by Dr. White was amusing. There appeared to be a desperate struggle to determine who should be the first to perform the operation or a series of operations of the kind suggested by Dr. White. Given a willing patient, castration was performed and the case rushed into print with a rapidity that was as entertaining as it was ridiculous. One gentleman, who, by the way, is one of my personal friends, and for whom I entertain a high regard, reported a case illustrating the success of the operation of castration for enlargement of the prostate in something like two weeks after the performance of the operation. It is hardly necessary to comment upon this case as a specimen of clap trap clinical observation. Such clinical experiences are conducive to notoriety, it is true; but as far as their practical value as bearing upon the operation is concerned, they are absolutely worthless. A number of other cases of equally fallacious clinical reports have appeared upon the medico-literary market from time to time. The tendency seems to be to adopt the new operation as a specific for prostatic hypertrophy with a total disregard as to the proper selection and differentiation of cases.

Much stress is laid upon the results of experiments upon the lower animals, it being claimed that the removal of one testicle will produce atrophy of the prostate in both animals and human beings. Excellent observers have noted apparent evidence in support of this view. Such reports, in my estimation, are to be received with a certain degree of caution. The normal prostate is by no means so easily outlined by the examining finger as some would have us believe, and a certain degree of skepticism is therefore warrantable in the consideration of cases in which the removal of one or both testicles has produced shrinkage of the normal organ. I am not going to quarrel specifically with reports of this kind, but I have had several patients under observation in which the experience of some of my colleagues is directly contradicted. I do not, however, accept my cases as conclusive, but am perfectly willing to admit that with increased facilities for observation the character and weight of evidence may be changed. I venture to report these cases on account of their suggestiveness.

CASE I was that of a young gentleman, twenty-eight years of age, suffering from chronic traumatic orchitis that had destroyed the function of the right testicle at the age of five years. A small hydrocele with extremely thickened walls was present. The tumor was very large, and as the testicle was evidently out of service, and extremely objectionable on account of its weight, I suggested an operation. The testicle was removed, and the patient has been seen from time to time during two years past. He had gonorrhea shortly after the removal of the testicle, and a subsequent follicular prostatitis with epididymitis of the remaining testis. The prostate was somewhat enlarged, as a consequence of the follicular inflammation. The enlargement has subsided, but the organ is still larger than normal.

CASE II was that of a gentleman, forty-five years of age, a monorchid, whom I treated for stricture and vesical inflammation. This patient has a prostate distinctly larger than the normal average.

CASE III was that of a gentleman, fifty years of age, who consulted me regarding chronic prostatitis with considerable prostatic enlargement, which had begun some months previously. On examination of this patient I was interested to note that he had but one testicle. On inquiry he stated that the absent member was lost through an injury received in the late war.

CASE IV. This man, thirty years of age, consulted me regarding a chronic prostatorrhea which he believed was incidental to masturbation in boyhood. One testicle had been lost by injury at the age of sixteen. The prostate in this case was tender. There was a history of slight stricture which had been treated some years before.

It may be objected that these cases have no direct bearing upon the effect of castration upon the normal prostate. It must be remembered, however, that these cases are a fair illustration of what exists in the early stages of a great many cases of enlarged prostate. More than this, they typify the condition existing in the incipient stage of a certain proportion of cases of prostatic hypertrophy—at a time when the best effect would be expected from castration if all that is claimed for the operation is true. In the case of the cryptorchid, the objection might be raised that the testicle which was apparently absent was retained within the abdomen, and was functionating with sufficient activity to preserve the physiologic integrity of the prostate. It is to be remembered, however, that in the case of cryptorchidism there is something more to be considered than the mere absence of the testes from the scrotum. Retained testes are always degenerate, and the imperfect development of retained testes should certainly have an effect upon the prostate, judging by the reported results of castration. It would seem, furthermore, that a more pronounced effect would be produced upon the prostate through coincidental failure of development of that organ.

I am prepared to accept the statement that castration relieves a certain proportion of cases of prostatic enlargement. I believe, however, that in the most typical forms of prostatic hypertrophy castration is not likely to accomplish any marked effect. There are cases, for example, in which much of the trouble experienced by the afflicted individual is due to a large quantity of residual urine. Shrinkage of the enlarged prostate in these cases is not likely to produce any very beneficial results, because the bladder-walls have become so changed by disease that no method of treatment short of cystotomy will bring about the bladder-drainage necessary to a cure or even marked relief. In those cases of prostatic hypertrophy in which distinct circumscribed fibro-adenomatous tumors exist about the neck of the bladder it does not seem reasonable to expect much from castration. The cases in which it is most likely to be beneficial are in relatively young subjects in whom the activity of the gland and its nerve-supply is still well marked. In those cases in which the prostatic enlargement is, so to speak, incipient, the overgrowth is soft and is likely to be benefitted by measures of treatment less severe than castration. Chronic inflammation and hyperplasia will express as nearly as anything the condition of the prostate in these cases. Prostatic massage, with measures to allay irritability of the deep urethra—*i. e.*, the true vesical neck—is likely to prove of great value in these cases.

One thing is certain, that in individuals with active sexual desire and normal potency castration is by no means to be thought of. I know of no rational operation upon the bladder and prostate which is not more justifiable. Some of my over-enthusiastic surgical brethren are likely to get themselves into very hot water if they do not exhibit more caution and conservatism in handling prostatic hypertrophy than seems to be the tendency in certain quarters. Within the last week I have been consulted by a gentleman, fifty years of age, who enjoys the fullest sexual vigor, but who has a moderately enlarged prostate with frequency of urination, but with little or no residual urine. Several surgeons have advised this gentleman to submit to the operation of castration. I take this opportunity of interposing a strenuous objection to such operative procedures in cases of this kind. I do not believe that castration is warrantable as long as the individual retains his virility. This restricts the operation to a very limited field, inasmuch as the testes become more ornamental than useful at a rather late period.[1] Sooner or later some surgeon will get himself into serious trouble through having castrated a man for enlargement of the prostate. The patient who, in the presence of keen suffering, is likely to disregard the loss of his testicles, is also quite likely to experience a sufficient amount of regret after his sufferings have been relieved, to consider the question of malpractice, and when the existence of other and more logical operations for the relief of the symptoms incidental to hypertrophy of the prostate are taken into consideration, the sympathy of the average jury is liable to result disastrously to the surgeon.

It is my opinion, that the operation of castration for hypertrophy of the prostate should be advised only in men in whom the sexual function has either become abolished or so nearly so that the testes have become useless appendages. The operation is safer than operations upon the prostate, but no safer than suprapubic cystotomy, if properly performed. Indeed, the danger in the two operations is almost identical, inasmuch as it is the anesthetic, rather than the operation *per se*, that threatens life. Should it be shown, by further experience, that the operation of castration may be relied upon for relief in the larger proportion of advanced cases, it will then be warrantable to perform the operation of castration as the preliminary procedure. Should the operation fail, then suprapubic cystotomy is to be performed. In many of these advanced cases the indication for vesical drainage is likely to be so marked that the operation of castration will not be worthy of consideration. If the patient has to live but a short time, and his life is menaced by inflammation and sepsis, suprapubic cystotomy, prolonged drainage, and frequent irrigation would seem to be much more logical than castration.

It must be admitted that the operation of castration for hypertrophy of the prostate is still in its experimental stage, and I venture the opinion that what the procedure most needs is to be saved from its friends. Surgical "itch" and cupidity are likely seriously to cripple the future of an operation that certainly has a certain degree of promise.

As far as my own conservatism is concerned, I am ready to become radical in the application of the operation to appropriate cases as soon as sufficient evidence has been accumulated by competent observers. I certainly will not accept as competent those observers who report cases within a few weeks after the operation, when, as a matter of fact, the rest necessitated by the operation, the sedative effect of the anesthetic, and the duty incidental to the after-care of the case, may be mainly responsible for the benefit of the operation. I wish to know, moreover, that the results are permanent in a large proportion of cases. At one time I firmly believed that suprapubic cystotomy would permanently cure a large proportion of cases of enlarged prostate. I found that during the prolonged drainage after an operation the enlargement of the prostate subsided very rapidly.

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[1] I recall an incident in my own practice suggestive of the truth of this statement. A gentleman, seventy years of age, consulted me for enlargement of the prostate. I incidentally mentioned the new operation for the relief of that condition. The old gentleman amused me greatly by remarking that while "that operation might do for real old men," he would have "none of it." He expatiated sufficiently to convince me that his testes were by no means useless appendages.

With reference to the speedy resolution of the prostate, claimed to result after castration, I note that I have observed a similar apparent resolution of the disease-process within one week after suprapubic cystotomy and drainage; yet in the larger percentage of instances I have found that suprapubic cystotomy was by no means a permanent cure in the cases of more pronounced prostatic enlargement. In younger subjects, suprapubic drainage will invariably, in my experience, bring about a subsidence of the prostatic enlargement, which in many cases will remain permanent. When circumscribed tumors exist, however, and in cases in which the prostatic enlargement is firmly organized, such a result is not to be anticipated.

In conclusion, I will state as my own belief regarding the surgery of the prostate, that the radical operations of prostatotomy and prostatectomy at an early period of the disease are not performed with sufficient frequency. If patients of middle age were given to understand distinctly that their prostatic disease is bound to grow worse instead of better, and an operation was suggested at an earlier period, we would hear less of the incurability of prostatic hypertrophy.

Very sincerely yours,
G. Frank Lydston.

815 Reliance Building, Chicago, Ill.

IN FAVOR OF THE FOUR-YEAR COURSE OF STUDY.

To the Editor of The Medical News,

Sir: Permit me to say a word in regard to the Woman's Medical College of Baltimore. It has never lagged behind in any movement for the betterment of the medical colleges and of medical education in this country. It is well known here that it has led the way in the reforms that have been introduced from time to time in this city. It cordially accepts the recent decision of the American College Association (the inception of which, by the way, is due to a member of its Faculty), and regards the matter as definitely settled, once for all. At the very first meeting of its Trustees after this decision a resolution to adopt a four-year course was passed without the least evidence of dissent. I may say, however, that even before the adoption of the four-year course by the College Association, in May, 1894, the Trustees of this college had voted to lengthen its annual term to eight months; that for thirteen years we have had a seven-months' term and for eleven years a three-year course. With regard to the other colleges here, I may say that I believe that they will accept the lengthened term as heartily as we have done.

Yours very truly, Eugene F. Cordell, M.D.,
For Trustees of the Woman's Medical College.

Baltimore, Md.

NEWS ITEMS.

The Medical Society of New Jersey will hold its one-hundred-and-twenty-ninth annual meeting at Cape May, N. J., on June 25 and 26, 1895. Among the papers to be read are the following: Annual Address by the President, O. H. Sproul, Diseases of Pregnancy and Parturition; Some Original Investigations, Showing the Antagonism Between Morphin and Cocain, by J. W. Stickler. Discussion: The Practice of the *Journal of the American Medical Association* in Advertising Secret Nostrums; Comparative Advantages of Water, Hot or Cold, *versus* Germicidal Solutions in Modern Surgery; Essay: Third Vice President D. C. English, Our State Medical Society, Its Past Success, Present Needs, and Future Prosperity.

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State Medical Examinations in Virginia.—

Applicants from Philadelphia Medical Colleges for license to practise before the Medical Examining Board of Virginia, from Jan. 1885, to Oct. 1894.	No. of applicants.	No. licensed 1st examination.	No. rejected 1st examination.	No. licensed 2d examination.	No. rejected 2d examination.	No. rejected 3d examination.	Incomplete or withdrew.
Jefferson Medical College .	34	24	9	2	...	...	1
Jefferson Medical College and Baltimore Med. Coll.	1	...	1				
Jefferson Medical College and University of Virginia	1	1					
Medico-Chirurgical College	1	...	1	...	1	1	
University of Pennsylvania	9	9					
Woman's Medical College	2	2					

Applicants from Philadelpbia Medical Colleges for license to practise medicine before the Medical Examining Board of Virginia, May 8 and 9, 1895.	Number of applicants.	Number licensed.	Number rejected.
Baltimore Medical College and Jefferson Med. Coll.	1	...	1
Jefferson Medical College	3	2	1
University of Pennsylvania	1	1	

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The Practitioner is far better in nature than in name. Under the able editorial management of its new editor, Mr. Malcolm Morris, it is taking a new and higher rank among English medical journals. A distinguishing feature is the *Medico-literary Causerie*, the excellent writer of which seems to be pre-empting a somewhat untilled field—the relations of the profession and general literature.

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Dr. Theobald Smith, formerly Chief of the Division of Animal Pathology in the United States Bureau of Agriculture, has been made Bacteriologist to the Massachusetts State Board of Health and Professor of Applied Zoölogy in the Bussey Institute of Harvard University.

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Medical Legislation in New Mexico.—An act to regulate the practice of medicine and to establish a Territorial Board of Health has been approved by the Governor of New Mexico.

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At the Johns Hopkins University Dr. Simon Flexner has been advanced to Associate Professor of Pathology and Dr. William S. Thayer to Associate in Medicine.

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Dr. Francis H. Davenport has been made Assistant Professor of Gynecology in the Harvard Medical School.

◆

Dr. Harold C. Ernst has been made Professor of Bacteriology in the Harvard Medical School.

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ORIGINAL ARTICLES.

THE QUANTITATIVE ESTIMATION OF THE RENNET-ZYMOGEN; ITS DIAGNOSTIC VALUE IN CERTAIN DISEASES OF THE STOMACH.[1]

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THE detection and the estimation of free hydrochloric acid in the gastric contents are of considerable importance in the diagnosis of diseases of the stomach, but conclusions based upon these facts alone may be wholly fallacious, as it is well known that mental conditions and various external influences, as well as disturbances of the circulation, influence the secretion of hydrochloric acid. Not only marked changes in the mucous membrane, therefore, but also functional disturbances may cause diminution or absence of hydrochloric acid.

Quantitative examinations for free hydrochloric acid give us but little knowledge of the degree of destruction of the gastric mucous membrane, for, while free hydrochloric acid is usually entirely absent in marked change of the mucous membrane, we frequently find the same condition when the changes are but slight. It is, therefore, generally admitted that, in order to draw proper conclusions concerning the true condition of the stomach from examinations for free hydrochloric acid, the examinations should be frequently repeated. But even then we may still be in doubt as to whether there is a nervous anacidity, slight or marked catarrh, or a hyperemic condition of the stomach, secondary to diseases of some other organ.

While such variations are found in regard to the secretion of hydrochloric acid, the secretion of the ferments, or rather of their zymogens, bears a definite relation to the pathologic changes present. Boas has shown that external influences, as well as congestive conditions, have little effect on the secretion of these substances, and that a marked diminution in their quantity is aways indicative of some serious gastric lesion. The quantitative estimation of pepsin and its proenzyme has, until recently, been attended with great difficulty. Methods have been devised for this purpose by Boas,[1] Johannessen,[2] and others, but exact results cannot be obtained by any of these methods. It is, therefore, necessary, in exact examinations, to test the peptic strength by weighing the fibrin before, and then again after partially digesting it in a given quantity of gastric juice.

This method is quite complicated and wholly unsuited for practical purposes. A new method for the estimation of pepsin, which is simple and seems to give exact results, has recently been devised by Hammerschlag.[3] This method has not as yet been generally employed.

The estimation of the rennet-ferment (lab) and its proenzyme (labzymogen) is very simple. The method usually employed is that of Boas:

> The detection of the milk-curdling ferment is as follows:[4] Ten c.cm. of gastric filtrate are exactly neutralized with a $\frac{1}{10}$ normal NaOH solution, and 10 c.cm. of neutral milk are added, and the mixture placed in an incubator at 38° C. If the rennet-ferment is present, a casein-coagulum is formed in from ten to fifteen minutes.
>
> The detection of the rennet-zymogen is as follows:
>
> To 10 c.cm. of gastric filtrate, made slightly alkaline, 2 c.cm. of a 1 per cent. solution of calcium chlorid are added, and then 10 c.cm. of milk, and the mixture placed in the thermostat.
>
> If the rennet-zymogen is present, a heavy cake of casein is precipitated in a few minutes.
>
> The quantitative estimation of the milk-curdling ferment is made as follows: A part of the gastric filtrate is exactly neutralized, and portions are diluted with distilled water ($\frac{1}{10}$, $\frac{1}{15}$, $\frac{1}{20}$, etc.). Five c.cm. of each of these portions are placed in beakers, 5 c.cm. of neutral milk are added, and the mixtures placed in the thermostat. It can thus easily be determined at which dilution the ferment is no longer active.
>
> As to the quantitative estimation of the rennet-zymogen, a part of the gastric filtrate is made slightly alkaline and portions diluted ($\frac{1}{10}$, $\frac{1}{15}$, $\frac{1}{20}$, $\frac{1}{25}$, $\frac{1}{30}$, $\frac{1}{35}$, etc.). To 5 c.cm. of each of these portions 1 c.cm. of a 1 per cent. solution of calcium chlorid is added, and 5 c.cm. of milk. The dilution can thus be deter-

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[1] Read at the annual meeting of the Medical and Chirurgical Faculty of Maryland, April 24, 1895.

[1] Boas: Allgemeine Diagnostik und Therapie, 3. Auflage, S. 187.

[2] Johannessen: Studienüber die Fermente des Magens, Zeitschrift für klin. Medicin, Bd. 17, H. 3 und 4.

[3] Hammerschlag: Ueber eine neue Methode zur quantitative Pepsinbestiumung. Internationale klin. Rundschau, Jahrg. viii., Sept. 1894, No. 59.

[4] Loc. cit., S. 188.

mined at which the rennet-zymogen is no longer active.

By means of this method Boas has arrived at the following conclusions:

1. In spite of the absence of free hydrochloric acid, the rennet-ferment may still be present, but only in small amount, in dilutions of from $\frac{1}{10}$ to $\frac{1}{20}$.

2. In the absence of free hydrochloric acid the zymogen may be present in normal amount, even in dilutions of from $\frac{1}{100}$ to $\frac{1}{150}$. The repeated demonstration of the normal proportion of the zymogen proves with great certainty that an organic gastric disorder is not present, and that there is either a neurosis or a secondary gastric congestion.

3. The zymogen may be diminished one-half. This is most frequently due to a catarrh of moderate intensity. The more nearly the zymogen reaches the normal the greater is the probability of entire recovery under proper treatment.

4. If the labzymogen is much diminished in quantity, *e. g.*, $\frac{1}{10}$, or entirely absent, there is always a severe and incurable catarrh, which may be primary, or due to another disease, as carcinoma, amyloid degeneration, etc.

5. In the conditions represented by 1, 2, and 3, the secretion of hydrochloric acid may be increased by proper treatment. In the condition represented by 4, there is but little hope of renewing the secretion of hydrochloric acid.

During several years I have as a routine practice made examinations of the gastric contents obtained one hour after an Ewald test-breakfast, to determine the activity of the milk-curdling ferment and its zymogen. It is to the result of these examinations that I wish to call attention.

Of the cases selected from many hundreds only those have been tabulated in which at least three examinations were made. In order to reduce the tables still more I have omitted many cases giving results exactly similar to others already given.

In Table I are represented the cases in which there was a normal percentage of free hydrochloric acid. There are here tabulated the results obtained from three normal cases, three cases of atony, a case of simple dilatation, and three cases of nervous dyspepsia. In order to make the tables more intelligible, the points of dilution at which the milk-curdling ferment and its zymogen were still present are placed in full numbers in this as well as in the following tables. They should, therefore, read $\frac{1}{12}$ for 12; $\frac{1}{50}$ for 50, etc.

It is seen that the degree to which the milk-curdling ferment may be diluted is much less than that of its zymogen, for, while the former is never present in dilutions less than $\frac{1}{40}$, its zymogen may at times be still distinctly recognized in dilutions of $\frac{1}{150}$.

Table I.—Cases with Normal Percentage of Free Hydrochloric Acid.

Number of examination.	Name.	Disease.	Total acidity.	Per cent. of free HCl.	Milk-curdling ferment.	Milk-curdling zymogen.
1	F. J.	Normal	50	0.175	12	150
2	...	......	64	0.161	15	150
3	...	......	48	0.148	28	100
4	E. F.	Normal	42	0.139	24	75
5	..	......	46	0.158	22	40
6	...	......	54	0.149	22	50
7	J. M.	Normal	55	0.169	18	80
8	...	.....	51	0.160	40	25
9	...	......	58	0.154	32	150
10	F. B.	Atony	40	0.143	10	125
11	...	......	44	0.145	34	75
12	...	......	42	0.141	15	100
13	M. W.	Atony	48	0.159	18	150
14	...	......	50	0.151	15	75
15	...	......	44	0.139	40	50
16	L. P	Atony	50	0.148	38	70
17	...	......	48	0.139	12	125
18	...	......	55	0.152	40	50
19	H. K.	Simple dilatation . .	68	0.169	12	90
20	...	......	62	0.165	10	100
21	...	......	63	0.160	35	55
22	H. T.	Nervous dyspepsia . .	48	0.142	40	35
23	...	......	44	0.149	12	90
24	...	......	40	0.134	16	100
25	K. S.	Nervous dyspepsia . .	42	0.140	15	125
26	...	......	44	0.139	40	35
27	...	......	48	0.134	20	100
28	H. T.	Nervous dyspepsia . .	50	0.138	8	75
29	...	......	46	0.141	12	150
30	...	......	40	0.135	24	70

Table II.—Cases with Increased and Diminished Percentage of Free Hydrochloric Acid.

Number of examination.	Name.	Disease.	Total acidity.	Per cent. of free HCl.	Milk-curdling ferment.	Milk-curdling zymogen.
1	B. C.	Supersecretion . .	89	0.305	40	50
2	...	......	86	0.302	35	45
3	...	......	82	0.297	40	25
4	J. A.	Supersecretion . .	98	0.301	32	25
5	...	......	96	0 302	30	55
6	...	......	82	0.289	25	10
7	D. W.	Superacidity; ulcer .	84	0.286	15	25
8	...	......	89	0.305	25	20
9	...	......	90	0.301	20	30
10	P. J.	Superacidity; nerv. dysp.	90	0.302	20	30
11	...	......	89	0.302	20	35
12	...	......	88	0.298	15	30
13	G. A.	Superacidity; nerv. dysp.	88	0.301	25	15
14	...	......	92	0 302	20	20
15	...	......	98	0.310	15	25
16	F. L.	Superacidity; nerv. dysp.	92	0.301	15	20
17	...	......	89	0.295	20	55
18	...	......	86	0.302	35	45
19	F. K.	Subacidity; nerv. dysp. .	30	0.0 8	35	30
20	...	.....	28	0.084	20	35
21	...	......	26	0.082	10	40
22	J. D.	Subacidity; nerv. dysp. .	24	0.081	25	40
23	...	.....	28	0 086	25	20
24	...	.....	29	0.089	10	25
25	S. F.	Chronic gastritis . .	34	0.102	20	50
26	...	......	26	0.091	12	40
27	...	......	24	0 084	14	35
28	K. M.	Chronic gastritis . .	34	0.096	18	25
29	...	......	38	0.099	12	20
30	...	......	36	0.104	14	25
31	L. P.	Chronic gastritis . .	37	0.098	10	25
32	...	....	34	0 098	14	20
33	...	......	32	0.092	20	15

In Table II are represented the cases with increased or diminished percentage of free hydrochloric acid. There are two cases of supersecretion, a case of superacidity due to ulcer, two cases of nervous dyspepsia, all with marked superacidity, besides three cases of subacidity (nervous dyspepsia), and three cases of chronic gastritis with subacidity.

The milk-curdling ferment is not found in dilutions beyond $\frac{1}{40}$; its zymogen may be present in dilutions of from $\frac{1}{50}$ to $\frac{1}{10}$.

In Tables III A and III B are found the cases of nervous dyspepsia and secondary gastric disturbances, with entire absence of free hydrochloric acid. It is seen that while the ferment may be markedly diminished, its zymogen may still be present in dilutions of from $\frac{1}{150}$ to $\frac{1}{60}$.

TABLE III.—GASTRIC DISTURBANCES IN WHICH THERE IS AN ABSENCE OF FREE HYDROCHLORIC ACID.

A. Nervous Dyspepsia.

No. of examination.	Name.	Total acidity.	Milk-curdling ferment.	Milk-curdling zymogen.	No. of examination.	Name.	Total acidity.	Milk-curdling ferment.	Milk-curdling zymogen.
1	K. T.	8	5	100	7	P. L.	8	15	80
2	...	7	8	75	8	...	12	15	110
3	...	12	5	60	9	...	10	10	130
4	J. S.	12	12	70	10	F. M.	20	12	100
5	...	14	5	80	11	...	22	5	80
6	...	20	5	150	12	...	18	8	60

B. Secondary Gastric Disturbances (Hyperemic Condition of Stomach).

No. of examination.	Name.	Primary disease.	Total acidity	Milk-curdling ferment.	Milk-curdling zymogen.
1	K. F.	Pulmonary tuberculosis	8	5	75
2	...	......	12	8	80
3	...	......	10	5	75
4	L. F.	Pulmonary tuberculosis	15	5	65
5	...	......	14	10	75
6	...	......	8	8	100
7	P. M.	Pulmonary tuberculosis	12	5	120
8	...	......	10	12	80
9	...	......	14	5	65
10	J. P.	Heart-disease . .	20	16	150
11	...	......	12	5	75
12	...	......	10	8	150
13	J. F.	Heart-disease . .	14	10	75
14	...	.....	10	10	100
15	...	......	14	15	80
16	W.S.	Heart-disease . .	18	14	100
17	...	......	9	8	150
18	...	......	15	10	80

In Table III C we have represented cases of chronic gastritis. The milk-curdling ferment is much diminished (even to 0), the zymogen between $\frac{1}{30}$ and $\frac{1}{3}$. In cases of carcinoma, Table III D, the milk-curdling ferment is diminished, its zymogen reduced to from $\frac{1}{40}$ to $\frac{1}{15}$.

C. Chronic Gastritis.

No. of examination.	Name.	Total acidity.	Milk-curdling ferment.	Milk-curdling zymogen.	No. of examination.	Name.	Total acidity.	Milk-curdling ferment.	Milk-curdling zymogen.
1	B. H.	8	5	20	16	M. W.	0	0	5
2	...	10	8	25	17	...	0	0	5
3	...	12	10	10	18	...	0	0	7
4	G. F.	12	5	5	19	O. S.	0	0	10
5	...	10	10	25	20	...	0	0	5
6	...	14	12	15	21	...	0	0	5
7	S. S.	8	5	30	22	J. R.	0	0	7
8	...	9	5	10	23	...	0	0	5
9	...	10	5	25	24	...	0	0	7
10	B. W.	10	8	20	25	...	0	0	5
11	...	8	10	25	26	...	0	0	5
12	...	6	10	30	27	...	0	0	3
13	F. W.	4	12	25					
14	...	6	5	10					
15	...	4	5	5					

D. Carcinoma.

No. of examination.	Name.	Total acidity.	Milk-curdling ferment.	Milk-curdling zymogen.	No. of examination.	Name.	Total acidity.	Milk-curdling ferment.	Milk-curdling zymogen.
1	D. B.	8	10	20	13	F. L.	15	5	35
2	...	4	8	20	14	...	14	10	40
3	...	6	10	15	15	...	12	10	35
4	A. C.	10	15	25	16	O. M.	12	10	35
5	...	14	5	30	17	...	8	12	40
6	...	12	12	35	18	...	6	15	25
7	F. G.	14	8	25	19	L. T.	8	15	30
8	...	12	5	25	20	...	8	15	35
9	.	14	5	20	21	...	10	8	40
10	B. T.	13	5	20	22	S. L.	12	8	35
11	...	19	8	25	23	...	20	5	35
12	...	21	8	25	24	...	8	5	30

We have thus shown that in conditions in which the free hydrochloric acid is absent, but in which there is no pathologic change in the stomach, such as in nervous dyspepsia and secondary gastric catarrh, the zymogen is still present in dilutions ranging between $\frac{1}{150}$ and $\frac{1}{60}$. In those conditions, however, in which there are structural changes in the gastric mucous membrane, such as in chronic gastric catarrh and carcinoma, the zymogen is markedly diminished ($\frac{1}{30}$–$\frac{1}{3}$), depending upon the severity of the disease. The more nearly the zymogen reaches the zero-point the greater the destruction of the gastric mucous membrane, and the less the chance for complete recovery.

Our conclusions may be summed up as follows:

1. Under normal conditions the milk-curdling ferment may be present in dilutions up to $\frac{1}{40}$, the zymogen up to $\frac{1}{150}$.

2. In those cases in which there is a normal or diminished percentage of free hydrochloric acid, the milk-curdling ferment and its zymogen may be present in normal quantities or may be markedly diminished. Their estimation, therefore, in these cases is of little value.

3. The estimation of the milk-curdling ferment and its zymogen is of great diagnostic as well as prognostic importance in those cases of gastric disorder accompanied by an entire absence of free hydrochloric acid. In these cases (chronic gastritis or carcinoma) there is marked diminution of the zymogen ($\frac{1}{40}$–0), depending upon the severity and extent of the disease. In cases of nervous dyspepsia, as well as in secondary catarrh, the zymogen is present in normal proportions in dilutions of from $\frac{1}{150}$ to $\frac{1}{60}$. We can, therefore, readily determine whether there is actual disease of the gastric mucous membrane or simply a nervous or congestive condition.

4. In those cases in which there is an absence of free hydrochloric acid, and in which the labzymogen falls between $\frac{1}{60}$ and $\frac{1}{40}$, it is impossible to determine at once whether there is a catarrhal condition or nervous dyspepsia present. Several examinations must be made to determine whether the labzymogen ranges above $\frac{1}{60}$ or below $\frac{1}{40}$.

5. In cases of chronic gastritis the examination for the labzymogen is of considerable prognostic importance. In those cases in which the labzymogen is diminished from $\frac{1}{15}$ to 0 there is no chance of recovery; in those in which it is diminished from $\frac{1}{40}$ to $\frac{1}{30}$ there is a possibility that judicious treatment may result in recovery.

ANOTHER WORD ON ADENOID GROWTHS OF THE PHARYNX.[1]

BY HARRISON ALLEN, M.D.,
OF PHILADELPHIA.

IF I am right, three clinical states exist as the result of the presence, under certain conditions, of adenoid tissue in the naso pharynx. First, one due to hypertrophy of the mass, and leading to obstruction of the naso-pharynx; second, one due to deformation of the bony walls of the naso-pharynx, which causes a growth of normal proportions to obstruct nasal respiration; and a third, one due to a growth normally situated in a capacious naso-pharynx which does not obstruct nasal respiration, but which acts in some obscure way to disturb seriously the general health.

In the first group are placed the conditions described by W. Meyer, now little more than a quarter of a century ago. The effects of adenoid hypertrophy in maintaining mouth-breathing, creating chest-deformation, exciting catarrh of the upper respiratory tract, impairing speech, and causing deafness, have been accepted by all observers.

In the second group of cases a small, narrow, highly angulated naso-pharynx, with tumid membranes, is occupied by a small normal adenoid mass. The symptoms of group two are those of group one, but their significance is different. The interest is not so much with the pharynx as with the skull. Examples are seen in subjects of cretinoid microcephaly. They are to be met with in institutions for the feeble-minded, and occasionally in private practice.

In the third group, the mere size of the growth is relatively unimportant, but the fact that it is in itself mischievous is of first importance. Occasionally a child will come under notice in whom there are many phases of malnutrition: stunted development, anemia, capricious appetite, intractable disposition, mental perversity or dulness, and a tendency to take cold from slight exposure. Such a child, nevertheless, may enjoy normal respiration. There is no deformity of the chest and face; no enlargement of the tonsils; and, as a consequence, it is apparently not justifiable for the physician to make an exploration of the naso-pharynx, much less for him to propose an operation. All the conditions mentioned may be readily accounted for by parents through interference with the general health. The very fragility of the child excuses relaxation of domestic discipline, and some at least of the phases of ill-health may be accounted for by an inheritance of malnutrition. However, I recall an instance in which the maternal judgment proved to be better than my own. A lady, who had known of an operation for the removal of an adenoid growth which resulted in benefit, brought to me a child, aged six years, who exhibited the signs already mentioned. The object the mother had in view in reporting was to have me operate. I declined to do so, because I could not diagnosticate adenoid hypertrophy. After having the child under observation at long intervals for two years, no material improvement being acknowledged, and the mother still insisting that an operation be performed, I conferred with the family attendant, Dr. D. Murray Cheston, and we agreed that under the circumstances it would be well to make an examination under ether. Introducing the index finger above the velum I found to my surprise an adenoid growth. The naso-pharynx was capacious and of high vault. This accounted for the fact that the mass had not been detected. The growth was removed. The child recovered (as I believe entirely as a result of the operation) from all the conditions concerning which the mother had been solicitous.

Another case, that of a child six years old, who was sent to me by Dr. John H. Musser, was a subject of congenital syphilis. Nasal catarrh of an inflammatory type was present, accompanied by gelatinous exudates, which, becoming inspissated, formed "crusts." Fetor was present. The teeth were notched and otherwise characteristic; the nose was inordinately depressed at the bridge, and the skin was dry and harsh. After the removal of the nasal crusts the nose was found to be unduly capacious, and the space for nasal respiration more than sufficient. No chest-deformity existed. I accepted this case as one of atrophic catarrh, of syphilitic origin, and so treated it. It did not occur to me to explore the naso-pharynx. The patient was difficult to manage, and appeared to be just on the border-line between the normal child and the juvenile defective. It being impossible to properly cleanse the nasal chambers, I proposed, after an observation of the case extending over several months, with no essential gain, to etherize and carefully explore the nasal chambers, hoping in this way to remove some of the sources of the fetor. It occurred to me while the child was anesthetized that it would be well to explore the naso-pharynx. I cannot well express my astonishment when I found the vault occupied by a large growth. Permission being granted to remove the mass, it was ablated with the finger. The child made an excellent recovery, and in a short time every vestige of nasal disease disappeared. The change in this child was striking. His mental attitude was greatly changed for the better, and has since remained so. Here then was a case of adenoid disease which was remarkable only for the coincidence of its occurrence in a child the subject of congenital syphilis. The treatment for syphilis was not an important factor; that for ablating the adenoid was an all-embracing one.

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[1] Read before the Medical Society of the State of Pennsylvania, at Chambersburg, May 23, 1895.

The advantages of medical societies, as I understand them, are confined not merely to the reading of results of experience in practice, but to the making of suggestions as to what manner medical studies of all kinds should be pursued. As an appendix to my reports of cases I venture to make a few remarks as to the method of studying adenoid growths in the naso-pharynx.

Several years ago (*Trans. Amer. Laryng. Assoc.*, 1886, p. 9) I invited attention to the possibility of an abnormal adenoid growth being found associated with the pituitary body by means of the canal (Landzert's canal) through the base of the skull. Whether this may prove to be the case or not, it would be well in cases of death of children with adenoid disease (and this must frequently occur when we consider the large number of juvenile diseases that occur coincidently with the adenoid growth) that occasionally opportunity will be presented for careful post-mortem examination of the brain and the naso-pharynx. I would suggest that in such autopsies the base of the skull (embracing the membrane and outgrowths from the pharyngeal vault, the pituitary fossa, and the pituitary body) be removed as a single piece, and this be prepared in the usual way for microscopic examination. Together with this segment the pineal gland should be removed, prepared, and examined by the same methods. The teachings of embryology suggest that pharynygeal structures are related intimately to encephalic structures by means of the pituitary and pineal bodies; and pathology has already associated morbid states of the pituitary body with general nutritive processes. I remain of the opinion that adenoid growths, while, as a rule, acting mechanically, will occasionally manifest the symptoms of a veritable disease which is allied to other affections of the bloodvessel, gland, and lymph systems, and which should be regarded as having a dominating influence on metabolic processes. It is thus placed in alliance with akromegaly and myxedema.

REPORT ON HYDROPHOBIA.[1]

By CHARLES W. DULLES, M.D.,
OF PHILADELPHIA.

During the time that has elapsed since the last meeting of this Society I have collected accounts of fifteen cases of what was called hydrophobia in the United States. Of these there were: Males, 10; females, 5. The ages ranged from three years (two cases) to eighty-three years (one case). The animals to which the disorder was ascribed were: In thirteen cases, dogs; in two cases, cats. The incubations varied from three weeks to six months. Four of the deaths followed bites of dogs unsuspected of having rabies. Of the fifteen cases, one was doubtless due to drink and uremia; one was considered to be hysteria at Bellevue Hospital, and died soon afterward under the care of the New York Pasteur Institute; three were plain lyssophobia (one dying in the New York Pasteur Institute), and one "mewing like a cat" (a cat-bite case).

The pernicious use of strong narcotics is notable in the treatment of many of the fifteen cases I have collected and the apparent uselessness of cauterizations with silver nitrate.

I have, since we last met, made a study of my records for five years of what I have labelled "mad-dog scares" in my notes. The result of this study indicates that in fifty-five instances of alarms about mad dogs, with a record of one-hundred-and-seventy-five persons (of all ages) bitten, I have found only three deaths from so-called "hydrophobia." This, if correct, would indicate that the natural mortality from the bites of rabid dogs is 1 : 58, or less than 2 per cent. The vast majority of the deaths attributed to hydrophobia have followed bites by unsuspected dogs, and very few have followed bites by dogs that ran amuck and that excited alarm at the time. It is a very curious fact, taken in connection with this one, that a very large number of the deaths from so-called hydrophobia follow the bites of dogs that had no history or appearance of any disease.

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[1] Read by title before the Medical Society of the State of Pennsylvania, at Chambersburg, May 23, 1895.

The number of cases for the past year is about what I have before reported for other years. The total probably does not include all the cases that have occurred in the United States; but I think that it represents the actual figures as accurately as the statistics attainable in other countries, without government assistance in the work of collecting statistics. Against this number of actual deaths we may set the absurd claims put out by Pasteur Institutes of so-called "cures." Last year the Institute in Paris treated 1194, all supposed to be liable to die of hydrophobia; and these figures will probably be used to support the assertion, copied into books all over the world, that Pasteur has reduced the mortality from hydrophobia to less than 1 per cent. of those bitten by rabid animals. It is astonishing and disheartening to find men occupying responsible professorial positions who fail to see the utter fallacy of such claims or to appreciate the wrong they do by accepting and approving them.

This suggests a thought in regard to treatment; and, first, the treatment of the bite. I am strongly opposed to the practice of cauterizing with silver nitrate, which has been an article of faith ever since it was used and recommended by the English veterinarian, Youatt.

I have seen and treated very many dog-bites, and have not used lunar caustic for thirteen years, and no person that I have treated has yet developed hydrophobia, so that the mortality of those treated by me is less than that of those treated in Pasteur Institutes. My treatment is simply thorough surgical cleansing and the application of a simple antiseptic dressing for a few days, with the positive assurance that there will be no danger of any disease.

The purpose of this short report does not require that I should go into the treatment of the disorder called hydrophobia when fully developed. I have described that fully in a paper in the *Therapeutic Gazette*, July 16, 1894.

ORIGINAL ADDRESS.

HOSPITALISM.[1]

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Definition.—The dispensary-disease, or hospitalism, is a contagious, epidemic, ingravescent neurosis of civilization, limited (it is to be hoped) as regards time to the present *fin de siècle*, and as regards geographic distributions to urban populations; it attacks three considerable classes, the professional philanthropist, the commercial physician, and the social sponger, and, so far as medicine is concerned, is characterized by a maniacal propensity to professional suicide and to the spread of the disease by the inoculation of the will with the germs of the affection.

Etiology.—In brief, there are two chief etiologic factors. The first consists in the morbid desire of the lazy charity-monger to perform his duties vicariously; the second springs from the ambition of certain physicians to "get on, regardless." From the interactions and mutual complementings of these these two cachexiæ arises the distinct type of disease called hospitalism. These two agencies may need an added word of explanation. The first, the habit of the professional philanthropist, united to the universal desire to satisfy conscience with vicarious charity, is a widespread evidence of religious and ethical anemia, resulting in multiform sociologic denutrition and malfunction. The unregenerate layman, the civilized savage of modern times, is subject to a strange hypnotic delusion that the universal law of the biologic world antedating civilization is an egregious error. This law has up to now proceeded on the assumption that health and vitality are the conditions of permitted life, and that this health and vitality are based essentially upon pay or equivalence of service, upon personal self-dependence, desire, and effort. The modern philanthropist jauntily sets aside the wisdom of the ages, the necessities of evolution, and all that, and says he has a much better idea of how to conduct the universe than has God. Acting upon this antithetic science he says the conditions of social health are the encouragement of personal dependence and the increase of pauperism. His remarkable therapeutic theory is that to cure a disease we must administer a remedy that in health would produce exactly the symptoms of the disease. He therefore seeks to cure pauperism and dependence by increasing the number of paupers and dependants.

There is nothing so delightful to weak souls as the unctuous self-flattery of benevolence, and there are few things more satisfying than to rid one's self of a nagging duty. We thus have two classes of citizens: The tremendously large class that pay others to perform their personal duties, and the very small class of those that hire themselves out as agents of the first class. Charity and the personal relation to the poor and sick are thus deftly avoided by this copartnership, and almsgiving and institutionalism deceptively act as vicegerents of the genuine officers. This is the first factor of the dispensary-disease.

The second factor is confined to the medical profession itself. Like most other people, certain doctors desire to "get on, regardless." The vicarious and professional philanthropist offers him the means in the shape of institutions for the treatment of all other diseases except the hospitalic variety. (Perhaps in the progress of time and with the growth of virtue we shall have a special hospital in every large city where may be treated those in the acute and violent stages of the terrible disease, Epidemic Hospitalism.) If the enterprising doctor can get himself appointed "Professor," or "visiting physician" to one of the numerous institutions supplied by the vicarious philanthropist he will at once become better known; he will be furnished abundant

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[1] A paper read before the American Academy of Medicine, at Baltimore, May 4, 1895.

"clinical material;" he will get ahead of his less fortunate brothers; and he will assuredly "get on, regardless." Lachrymose sentimentalism and philanthropic vanity are appealed to, endowments follow, wills and codicils to wills are made, and lo! there arise the lofty walls, the spacious wards, the waiting-rooms and operating-rooms, the crowded out-patient departments, the boards of wealthy trustees, and the not-to-be-forgotten medical staff itself.

Sometimes the physician bound to get on, the business doctor, *sans phrase*, conceals his ambition with the broad mantle of institutionalism itself, and it appears that the patient (the doctor-patient afflicted with the disease) indulges in a mild monomania of enthusiasm for his particular medical college, for medical science, and for the purposes of medical instruction. He solemnly contends that without an abundance of clinical material the best medical instruction would be impossible, and medical colleges would languish. His by-standing *confrères*, not yet afflicted with the disease, smile pityingly, both at the patient's delusions and at the sorry belief of the patient that he is deceiving those about him as to the real motives of his mind. Those healthy-minded attendants know that there will always be an abundance of clinical material supplied by the worthy, the deserving, and the really poor, without the appeal of competitive medical charity to those who could pay for medical service. They also know that nine times out of ten his medical college itself has no ethical or scientific *raison d'etre* whatever, but is itself simply another bit of objective evidence of personal and selfish ambition on the part of those who are "getting on, regardless" by means of their "Professorships" and the advertisement of official position. If one has been vouchsafed a clear glance into the inferno of political chicanery and undiluted deviltry that often go on to secure a professorship in a modern medical college, he will have a perfect demonstration of the altruism and the purity of the "charity" at work among the candidates. Men do not smash the entire Decalogue and commit all the venial sins in order to get an opportunity to be kind to the sick or to teach boys how to cure disease.

The etiology of hospitalism may, therefore, be epitomized as consisting, first, in the morbid desire of the well-to-do to rid themselves of real charity and of the duty of personal hand-to-hand and face-to-face kindness, by the self-deceptive, vicarious makeshift of almsgiving; and, second, to the get-on-regardless physician, reckless of the good of the profession, greedy of office and of patients, even though they are of the non-paying variety. Professorialism is only a variant of the disease of hospitalism, not a distinct type of disease.

SYMPTOMATOLOGY.—The disease afflicts three distinct classes of society, and has a somewhat different symptom-complex in each class.

1. The first, the endowing class, many of them placed by death beyond the reach of criticism, is composed of those that mistakenly preferred to patch up effects rather than altogether to prevent them, and who left their money without proper stipulation of the conditions under which their trust should be administered. Theirs is a mournful error. There are so many ways, especially in medicine, of preventing disease, of killing the causes of diseases, instead of curing the individualized results, that it is shameful that they did not add wisdom to pity, and to kindness, intellect. If we could but show the benevolent how much greater and more speedily reached would be the effect of their charity if applied to the encouragement of preventive medicine instead of to curative medicine: One well-equipped and endowed laboratory of hygiene, of bacteriology, or of sanitary science would do more for humanity than a dozen hospitals. To prevent diphtheria is a million times better than to keep everlastingly treating children ill with diphtheria.

But the unwise endower of hospitals committed another intellectual sin—and in this world intellectual error at last and always results in millionfold moral error. He failed to condition his gift with the necessary limitation that as a result of his charity none but the needy and deserving should profit by it. Without that condition, in the mutations of time, his kindness becomes an engine of evil, both to them who receive and to them who administer.

The endower is sometimes the State or the city. The fact itself proves that giving to hospitals has so long been recognized as right, *per se*, that no regard need to be paid as to how the money is spent. It is a most remarkable fact, this of giving away millions of the public money without a single stipulation, and hardly without a demand for accounting. When given to public officers for State asylums and hospitals the precedent is bad enough, but to church, sectarian, and college hospitals, and even to private institutions—this decidedly is to be thought twice about.

In the scramble of the competitive medical-charity debauch, the hungry institutions have hit upon a plan of making the universal public a universal endower. Everybody must be made to feel how good he is and to experience the pleasures of almsgiving. We thus have every imaginable form and invention of beggary spurred to the limit of endurance and of impertinence. Hospitals Sundays, fairs, "dances for sweet charity," masked gambling, and heaven knows what else, are instituted. It might, with self-restrained people, it certainly should, suggest a little prudence to see how prominent in getting up and pushing on these things are the wives, mothers-in-law, the personal friends, or the relatives of the ambitious visiting physician, or would-be professor, the advertiser, the newspaper doctor, *et hoc genus omne*. The motive of self-seeking is too often but poorly, very poorly, concealed, and sometimes it is thought good enough to boast about.

2. The second class, the lay-public, likewise suffers from the disease, although it thinks itself very cunning and lucky in having the disease. There are more diseases than hysteria that people love to suffer with, and the dispensary-affection is an example. There is no evil that is more ruinous than the awful one of communism. When a man gets that poison in his blood he will be a curse to the world until he is well-hanged, thoroughly dead, and everlastingly buried. There is no curse so fatal as the curse of desiring to get something for nothing. It is the half-hidden rock upon which the very ship of state, democracy itself, is running headlong. Nothing is serving so subtly and so powerfully to prevent physical and social health, and to keep the world in the thraldom of disease, as medical beggary and medical communism. When a man buys medical service for nothing he pays a high price for it. He cultivates the habit of lazy reliance on medical aid, and grows

careless of hygiene. The people think they are fortunate in being treated for nothing, but instead of curing, the "treatment" really fastens the disease perpetually upon the very heart of the body politic. The medical profession is bound to the treadmill of curing individual cases and the effects of disease, instead of shutting off the causes of disease. The profession is so hardly pressed and so poorly paid that its members have no time to prevent disease. One of the great curses of medicine is the commercial medical colleges, with the resultant superabundance of doctors. The hospital and dispensary disease is encouraged by (nay, is one of the direct results of) the commercial medical college, and the vicious circle is completed by the mere reversal of the process. The rivalries and ambitions and "politics" of competitive medical charities, displayed every day stark naked to the public, at once arouse and disgust the world, and keep low that standard of professional dignity and honor, so that the profession cannot demand and command health. Hygiene and preventive medicine could at once halve the death-rate if we had the respect of the community, if we but spoke clearly and could carry to realization the known laws of life-saving.

If the cunning Communist only got what he thinks he is sponging! But every physician knows well enough he does not get it. How can one man diagnosticate the diseases of a hundred patients with scientific precision and treat them effectively in an hour? I may not speak dogmatically of other departments of medicine than my own, but I must confess that out of hundreds of cases of hospital refraction-work that I have afterward examined in my private office I have never yet seen one, my own included, that was correct. If only the *deserving* poor were treated, there would not be the crowds; if the physician received even the smallest fee, that fact would make the patient the master instead of the obsequious sponger; and then the doctor's work would have to be better, or the natural laws of competition would soon settle the fate of the bungler, and the "hustler," and the "cooker" of hospital statistics.

I am not at all certain as to the effect upon the social world of the free treatment of patients with syphilis and gonorrhea and alcoholism—a fact that constitutes a large part of hospital-disease. There are two sides to that question. I am not a little doubtful as to the ethics, and even as to the worldly wisdom of turning the hospital into an annex of the bagnio and the bar-room, a convenience whereby the natural punishment of the infractions of the sexual and hygienic laws (upon which life itself rests) may be escaped. It is not quite certain that we can get the best of God in such ways. There is entirely too much of the "prophylaxis-of-gonorrhea" business tainting the whole profession, and literally befouling much hospital-practice. One might more dogmatically decide as to the wisdom of the common social commingling of the prostitute and the innocent in the hospital-wards and the dispensary waiting-rooms.

3. But the physician is interested in his profession, and the influence of hospitalism upon our guild is becoming pernicious in the extreme. Take the simple fact of hospital-manners. I well understand that neither the possession of the doctorate degree, nor the possession of the knowledge and skill it should certify, can make a man a gentleman. But there is no doubt that the instant influence of the necessity of treating crowds of mingled deserving poor and of indistinguishable spongers acts disastrously upon the physician's disposition and manners. The very work wherein gentle kindness is as the sunshine's benediction over the gracious harvest-fields of benevolence is transformed into bitterness and harshness. What is more disgusting than arrogance and dictatorialness in a physician? What is more common in hospitals and dispensaries? A dog judges of his master's mood by the manner and the *timbre* of voice, although he understands hardly a word of language proper. Every hospital-patient, likewise, forms quick conclusions as to the man's character under whose care he comes, and instead of gratitude for the service rendered the ungentlemanly physician is breeding through the community a condition of mind that bodes no good for medicine. The patient thinks himself sharp to secure some benefit from grudging surliness, and the overworked, non-paid, half-excusable doctor is glad to get through his job in one or another wretched way. "He has the European habit and style"—such is the patient's verdict. The patients know well enough when they are looked upon as "clinical material," and when, on the other hand, they are sympathetically treated as unfortunate human beings, whom we have the *privilege* of helping.

And this leads to the thought that nothing so speedily and surely as hospitalism leads to the degeneration of the physician into the therapeutic or pathologic fiend. If an interne or visiting physician hangs about a hospital beyond a certain time, as is well known, the more certainly will he fail as a practising physician. Every day in the hospital teaches him to dissociate disease from humanity, and to fix his attention upon morbidity, *per se.* He learns to treat disease, and not the diseased human being. The laboratory, necessary as it is, runs the danger of becoming the execution-chamber of practical therapeutics. Every disease must be seen through the lens of personality before it can be thoroughly understood. There is no disease, there are only diseased tissues—and the tissues are alive, and there is a living soul unifying all the tissues into that strange product of life, Homo; and Homo is not one individual, but includes conditions, family, heredity, age. The rage for "clinical material" is becoming a genuine mania, itself a downright disease, a disgrace to curative medicine. Street-car placards and column-long newspaper "ads" soliciting patients are part of the expenses of some hospitals. From a daily paper I clipped the following racy account; it has too much of the air of truth to be more than half-lie:

"A local employment agency has instituted a unique departure. A few days ago an advertisement appeared in the morning paper, which read: 'Wanted—A young man suffering from pulmonary or heart disease. Examination free.' Inquiry at the office of the advertiser elicited the information that the 'young man' was wanted for the various hospitals about town, which were anxious to get live subjects for clinical demonstration. 'The applicants are received here,' said the manager of the agency, 'and are promptly examined. The eligible ones, that is, those who are found to be victims of the two diseases in question, are given cards for presentation at the hospitals which we serve. They are paid well for their services, and they suffer no inconvenience from their experience at the hands of the surgeons. Sometimes, in fact, they reap benefits which they had not counted on, some of them regaining complete health under the treatment. So you see pulmonary and heart affections command a sort of premium. Sometimes we find among the applicants some cases even more interesting than we had expected. These men, of course, command more money than the ordinary sufferers.' "

But all these methods of trapping game are often only diversions of the strong, subdominant motive of practice-hunting and success-advertising. Just as the great professors give lectures at medical colleges in order to get consulting practice, so will men consent to bang through a lot of "charity-cases" at the hospital and dispensary in order to have the *éclat* of the position and the fame that in one way or another brings private practice. Sometimes, indeed, it is not by the indirect means of the fame that patients are secured, but upon one excuse or another—the *modus operandi* is well known—the hospital is made a very *direct* feeder of the private office.

And what brutal injustice is the indiscriminate treatment of hospital-crowds to the younger members of the profession, and to those, the immense majority, who are not of the elect—the poor fellows who are neither professors, chiefs, nor visiting physicians; it is among the lay poor that the professional poor must work. After years of heroic preparation the young graduate finds the very teachers who have taken his money for instruction treating questionless and gratis those who should be his own pay-patients. I have a profound sympathy for the young and unsuccessful physician. He has been outrageously deceived, and is daily being outrageously treated by men of his own guild, to whom he has a natural right to turn for aid in this matter. If he settle in the country, the recklessness of the city-hospital and dispensary government pursues him like a fury. The non-discriminating urban physician receives the country patient without question. It is thought that the distance from which the countryman comes cancels all scruples as to duty to one's colleagues. Medical ethics have at best very narrow geographic limitations.[1] Only the countryman's local physician knows whether he is able to pay or not—but how often is the matter asked by the city brother? Even in private practice the rights of the distant local physician are but little considered; how much less, then, are they considered at the dispensary?

And thus, to summarize, are we cruelly, consciously, persistently committing professional suicide. Every noodlehead knows that that which costs no thought or labor is not appreciated by men, and yet we tumble over each other in our mad rush to do our grand work for nothing. We make the most valuable thing the most despised by our pusillanimous politics, until the poor public learns, instead of respect, contempt of us. Where is the hospital for free legal advice? And yet which is the most honored, medicine or the law? Oh! for a breath, nay, a blast of professional self-respect that would sweep us into unity. Why should we not have some organization, some *esprit de corps?* Even thieves preserve some sort of honor among themselves.

TREATMENT.—Let us briefly consider the treatment of the disease. What can be done to abate this graceless nuisance? A thousand good hearts and wise minds are racked by this problem. It is almost impossible to find a way out. In fact, we have gotten ourselves so pitiably diseased that we can hardly hope for much else than a life of chronic invalidism, at least so far as this generation is concerned. The disease, if one may so speak, is intensely chronic. One thing is certain, we cannot make men moral by act of Congress. There is not one great general remedy. Everyone of us must take the matter up. The Kingdom of Heaven is within you. The influence of one, of each individual, steadily and patiently opposing the wrong will, in time, transform the whole. Every one of us has power; each one of us has been a sinner; each one may do little or much toward stemming the evil trend.

And first as to the endowers, whether individual or communal, let us preach incessantly and repetitively the truth that indiscriminate charity is unadulteratedly sinful and cruel. Every penny given without inquiry as to merit is simply hiring people to be sufferers. In a great civilized country, only last year, there was discovered to be a fiendish manufactory of cripples and victims to excite pity and secure alms from the "charitable." Children's eyes were gouged out and every bone in their bodies broken, in order, by their exposure, to stir up the sensibilities of the "kind-hearted," who, by their gifts, kept the manufactory "running on full time." Just as certainly does indiscriminate charity operate now, and here, and everywhere. God's command is infinitely stern, but it is just as infinitely compassionate, that in the sweat of the brow shall we *earn* our bread. The lives of East Indian ryots are quite as happy, fully as comfortable, and far more moral than those of an American mob of train-wrecking strikers; and yet the annual income of the ryot is not one-thirtieth of that of the striker.

Let it be clearly understood that there is to be no chilling of sympathy, no killing of kindness, no less giving, because of this law of life. There is to be all the more—but the sympathy is to be intellectualized, the kindness is to be made effective, and the giving is really to stop the suffering, and not increase it.

We must teach the rich that every endowment of hospitals and dispensaries must be conditioned, narrowly, rigidly conditioned, upon the law that only emergency-cases and the absolutely deserving poor are to be treated in hospitals. When importuned to contribute on hospital-Sundays, or to attend entertainments, charity-balls, etc., etc., let us refuse, and publicly refuse, unless the managers of such hospitals publicly state that rigid exclusion of those able to pay something for medical services is carefully and systematically assured.

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[1] A remedy for the abuse of medical charity is offered by "A Young Subscriber" in a letter to the Medical Record. He suggests that the victim of this abuse "the next time and whenever he has need of a consultation, or has a patient to send to a specialist, avoid the man who daily robs him by indiscriminate dispensary-work, and pick out instead one who regards the rights of his fellows. There are men at the heads of dispensary-classes throughout the city enjoying large special practices, who boast that they have no care for the financial standing of their dispensary-cases so long as they furnish the required material for clinical purposes, and as for the complaining doctors they say, 'let them go and be blanked.' So long as they can do this and keep the support of the general practitioner, they will hold the same views. The moment they find it affecting their pockets they may at least cease to pride themselves upon their dirty treatment of their professional brethren. Let the non-dispensary men look to their rights, and they will soon have less wrongs."—[*Boston Med. and Surg. Journ., March 21, 1895.*]

The indiscriminateness of the doled-out charity of the hospitals is a natural result of the stupid indiscrimination of endowers. These pour out the money, year after year, and century after century, in reckless disregard of the laws of economics, of the real needs of the community, and of the experiences of other lands. Hospital-farms for epileptics, for the insane, homes for convalescents, homes for the dying, special hospitals of various kinds, especially for the tuberculous—these and more are pitifully wanted, and yet the old ways and the old evils are stupidly increased. If we could only have an omniscient or even half-wise Czar to direct almsgiving; if it were only someone's business to instruct people how to give their money. At present it depends either upon haphazard or upon the cunning wiles of some interested person. Rich plebeians, right versed as to oil, or beer, or dry goods, are made presidents or trustees, flattered to the top of their bent with the bauble of office and authority in the things of which they haven't even a spark or a glimpse of knowledge, all in order to wheedle endowments out of them. These go on building wings and additions to old evils, until, as with church-building, the historic momentum results in monstrous aggregations of multiform uselessness or abuse. And every day or two the daily newspaper-reporter gets hold of some scandal, a dying patient refused admission to hospitals, a fisticuff of rival visiting physicians, the "politics" of rival hospitals, etc., etc., and regales his readers with it. All the time the evil grows, until one of these fine days the donkey endower will suddenly awaken to a realization of the fact that he has been imposed upon, and that his ears are several inches longer than they should be. Then he will resign, shut up his pocket-book very tight, and genuine medical charities and properly conducted hospitals will suffer. To arouse the profession to the danger it is incurring by the abuses of medical charity, the danger of a sudden reaction whereby proper medical charity will be stopped, this has been the motive I have had in mind in writings upon this subject during the last six or eight years. It hardly needs the saying that one earnestly desiring the curing of a disease hardly wishes to kill the patient, yet some foolish folk affect to think that those who speak of the disease of the hospitals would destroy all hospitals as incurably diseased. The physician, even of the specialty Hospitalism, hardly desires to become a Reign-of-Terror guillotinist. Nothing is more divinely beautiful than a noble hospital, rightly managed, and illustrating at once the science, the art, and the benevolence of medicine. But, according to the old maxim, *corruptio optimi pessima*, and a hospital endowed by wealthy hypocrites, managed by medical advertisers, and filled by social parasites, is as bad as the other is good.

In the hospitals and dispensaries of England and Wales, 2,855,644 patients were treated in 1878, while in 1893 the number was almost four millions (3,985,263), an increase of noteworthy proportions. At the same time the number of physicians has, of course, also increased. In 1882 there was one medical man to 1703 people, whilst in 1893 there was one to every 1427—that is, each medical man has 250 less people in his *clientèle*. If this is true in England, where medical education and medical charity have preserved at least the tradition of sanity, what must it be in the United States? In order not to be charged with invidiousness, let us take the experience of a foreign institution. I assure you, however, illustrations could be had very much nearer home. St. Thomas' Hospital, of London, has an annual income of $285,000, and appeals urgently for more money. A writer in the *Medical Press and Circular* thus further describes the condition of this institution:

> "That hospital was chartered by Edward VI, and splendidly endowed with landed estate, and up to the year 1862 it enjoyed a high reputation, and, so far as I know, did its work efficiently. In that year its site at London Bridge was invaded by the Southeastern Railway, and the hospital received, I think, $2,300,000 as compensation. That to the common mind would seem to be a tidy sum with which to build a new hospital, especially as the ground which it occupies was secured on the cheapest terms, having just been reclaimed by the Thames embankment, but when architects and builders got, as they did, a firm hold of the job, it turned out to be quite insufficient to realize their aspirations. They succeeded in producing not only a heavy deficit, but a veritable white elephant—a building about twice the necessary size, containing bed-accommodation one-third greater than could be maintained by the income of the institution, and constructed in every detail in the most expensive manner. It was stated by the royal prince at this meeting that five of the wards are now empty, there being no money to keep them full, but it was not mentioned by his royal highness that several other wards are filled by paying patients, most of whom are in no sense deserving of charitable relief, and ought to be in their own houses, nursed and treated at their own expense, and not at the expense of the charitable.
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> "It would not be just to blame the present administrators of the Hospital for the mad extravagance of their predecessors of thirty years ago, but for the financial administration of the Hospital at the present day they are responsible, and I may ask a question or two on that. I find from *Burdett's Annual* that every bed maintained costs $512.37 per annum, and every patient admitted represents an outlay of $38.83, the highest rate among the twenty-three London general hospitals save four. This does not mean that the sick patient costs directly any such sum, for, as far as I can make out from the figures, his maintenance, nursing, and treatment do not consume more than one-third of the amount, the remainder representing outlay in salaries to officials, pensions, and other matters which are only of indirect benefit, if at all, to the sick patient. When I find that the most efficient provincial, Scotch, and Irish hospitals can, and do keep, nurse, and treat a similar patient all told for just half the money, I am moved to ask what claim has St. Thomas' to public sympathy? Not all the royal princes, dukes, archbishops, and millionaires in existence will persuade me that a hospital which builds beyond its means, spends its resources like water, and refuses to retrench, deserves to be subsidized with $500,000 or any other sum."

As to the public, every one is a teacher, and may make his voice heard against indiscriminateness. I plainly tell my patients, and the occasion arises nearly every day, that they cannot get as good medical service at the free dispensary as at the private office, and that private treatment is far cheaper than the treatment for which nothing is paid. I think it our duty to stigmatize the hospitals and give them a bad name. We can hardly exaggerate the truth in this respect. Let us laugh to scorn the clap-trap delusion of the masses that at the dispensary they will be treated by the great Professor Bigwig, and that therefore they will be better treated than by yesterday's graduate, Dr. Nobody. We, of course, know the silliness of such an illusion; we know that often at the hospital Bigwig gets all the honor and young Nobody does all the work. Ten to one, with his care and desire to establish a reputation, young Nobody would do the better work of the two, even if Bigwig had the case himself. Then there is the wasted time of the patient, the crowds, the shocking surroundings, the shame of being a pauper! Let us use the blunt, brutal word, and drive it into their heads—*hospitals and dispensaries are for paupers!* It will hurt a little, but it will do good. Every older physician has some younger friend and colleague who needs the poor patients and their poor fees. Why not do the patients and the friend a real service with one word of advice?

As to the profession, if one has anything to do with a hospital, one can do not a little in the interest of discrimination. A trained mind can learn to detect the old clothes put on for the visit, the odor of whisky, the concealment of ability to pay something. There should be no mincing of words with such folk. Every patient caught shamming should be half-insulted and unceremoniously turned out. Let them go to "other places where they will be welcomed;" the "other places" will thereby secure for themselves an evil name in time, which will prove a poor investment.

There is one half-evil that is condemned by some and practised by many, but it has the excuse that it is somewhat better than the hospital wholesale business. The drug-store doctor is not, perhaps, the best type of professional man, but he is not so bad as Professor Bigwig. By the drug-store doctor I do not mean the druggist who is not an M.D., but who in fact prescribes much as if he were. That problem is fast settling itself by the commercial medical college selling diplomas to the druggist. What is meant is the genuine doctor who also keeps a drug-store, but who charges—well, nothing for advice and everything for filling the prescription! Such a product of our *fin de siècle* medical civilization is in fact a direct reaction and result of indiscriminate medical charity. And since the doctor gets something, however roundabout, for his work, I am not inclined to scold him much. When hospitalism is whipped out of the field it will be time enough for all good men to turn in and run out the drug-store doctor.

Still another form the reaction has taken is that illustrated by the physician who, while pursuing essentially the same plan as the drug-store doctor, carries it out by the *vice versa* method. I mean the charging for advice but giving the medicine gratis. This is certainly a step, nay, two steps, in advance, and hits two heads well-deserved and good-resounding whacks with a single shillalah. Who does this at once "gets even" with the soulless hospital and with the nostrum-selling, prescribing druggist, both having tough skulls that need many downright doughty thwacks! Perhaps the same club may in time split wide open another cranium, that of the patent-medicine man. The remarkable progress in the arts of modern pharmacology make possible, and many other reasons make justifiable, the dispensing of one's own medicines.

In England medical clubs are already deemed unmitigated nuisances and deplorable grievances. With us they have not yet become so, but we are fast entering the same smooth *descensus averni*. But it seems to me even this phase of the wholesale medical business is preferable to hospitalism—a road, that if not to avernus, trends toward a lake into which certain tormented swine did once rush somewhat hastily, with much relief to their mental disease.

One finally asks why should each physician not have his own private dispensary? Behold his empty office and his unoccupied time! Why should he deimpersonalize his charitable work and give himself namelessly to an institution—a sort of a corporation which proverbially has neither a body to be abused nor a soul to be saved? Better it seems to me, and far better, would it be to do the service and get the gratitude one's self. In such cases there is a real and a scientific service on the physician's part, and a real and not a sham gratitude on the part of the patient. Private individuals should go into private competition with the hospitals. The hospitals can be whipped out every time. And when one corrects the botch-work of the hospitals, the time and the health of the patient have been so patently spared that the thank-offering of an unexpected and shyly given fee is much larger than one would have thought of receiving from a "charity-case." One may perhaps hear the sneer that it would be unprofessional for a hungering young doctor to solicit gratis-cases at his private office—and ten-to-one the sneer would come from one who hangs his name on big sign-boards from his dispensary-doors, and advertises himself or his hospital in cheap newspapers and on theater bulletin-boards. I would be far from justifying advertising ways on the part of the younger man, but decidedly when the advertisement of the hospital means the advertisement of the men running the hospital, then I excuse the young non-hospital advertiser first and quickest. When Bigwig quits the trickery, young Nobody will soon do so also.

I would like to add a suggestion that seems never to have occurred, either to our profession or to its most excellent co-working sister, that of the trained nurse. Thousands of women have heroically and successfully struggled under the greatest difficulties to secure their special training and ability. Thousands more are preparing, but already the profession is overcrowded. Why should they not take up the hospital-business as a work for which every consideration of natural and acquired fitness shows them adapted? The hospital-business is a sort of a special boarding-house business. I see no reason why in America we should drift into the huge barracks-hospital system with droves of daily thousands. The individualization of cases is the first requisite of clinical wisdom, and the individualization of hospitals is another professional desideratum. There might be hundreds of single-house hospitals or homes for the sick, adapted to different diseases, and to all purses, in all of our cities, in which nurses should be the responsible owners or controllers, and which any physician might upon regular business-arrangements send his patients, and relieve himself of all except the medical responsibilities, the nurse as now carrying out his orders. There is something belittling—I will not use a harsher word—in the custom of physicians going into the boarding-house business—euphuistically called the private hospital or the private sanitarium. The physician should not be interested in or bothered by the chambermaid's work, the price of beef, or the rental of rooms. This is all alien to his proper work, not seldom inimical to it, and even leading sometimes to scandalous conditions. But placed in the hands of a woman specially educated for exactly that sort of thing, it would at once elevate the dignity of her own nurse's profession, lessen the shame of the impertinent and bulimic hospital, and regulate and systematize the physicians' proper labor.

But when all has been said and done the hospital-abuse will continue unless professional sentiment is aroused. Trustees, professional philanthropists, and the public will gladly continue to eat the oyster of medical service, and leave the shells to our asinarian rivalries. Possibly there will be no great and thorough cure of the evil so long as we remain a divided profession, so long as local medical societies never touch professional abuses and wrongs, so long as censors have no moral sense and are never incensed—surely not so long as the American Medical Association numbers as members but one in a hundred American medical men. As certainly also there will be no reform while like a lot of unspanked schoolboys the members of that Association hanker after and quarrel over the right to advertise nostrums and to associate with quacks, and while the cynical wrap themselves in the cloak of respectability, hold themselves aloof, and grin sardonically from the safe retreats of success. The two immediate and demanded conditions of all reform are:

1. That medical men shall have a large share in the government of hospitals, thus making them responsible for abuses and rendering it possible to stop this old monkey trick of getting chestnuts by our stupid professional paws thrust into the fire.

2. The principle of the Charity-organization Society must be made a part of all hospital-management. It would be well if a genuine copartnership could be realized between the local Charity-organization Society and every hospital. At least, there must be at every hospital an officer whose sole duty it shall be to discriminate between the worthy and unworthy—and he must be made to discriminate, too.

POSTSCRIPT.—From the *Lancet* of June 8, 1895, we learn that during the year 1894 there were treated gratuitously in the London hospitals:

GENERAL HOSPITALS:	
In-patients	52.080
In Convalescent Homes	5.585
Accidents and Emergencies	264.379
Out-patients, number of visits	1,684,448
SPECIAL HOSPITALS:	
In-patients	24.963
In Convalescent Homes	2.526
Accidents and Emergencies	25,660
Out-patients (visits)	1,205.688
COTTAGE HOSPITALS AND CONVALESCENT HOMES:	
In-patients	24,963
In Convalescent Homes	39
Accidents and Emergencies	244
Out-patients (visits)	13.858
DISPENSARIES:	
Out-patients	1,204.045
Totals	4,508,478

The *Lancet*, in pitifully begging for more funds to carry on this tremendous labor, notes that whereas in 1890 the total number of out-patient visits was 2,429,219, in 1894 the number has risen to the perfectly absurd figures of 4,108,039. What more convincing argument could be adduced for lessening the amount of subscriptions, and thus, perhaps, stopping this riotous debauchery of both profession and public?

CLINICAL MEMORANDUM.

A CASE OF HEMATIDROSIS COMBINED WITH CHROMIDROSIS.

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THE case herewith reported is interesting on account of the recurrent attacks of the disease and for the variety of the location of the separate eruptions.

The patient was a professional rubber in a local Turkish bath. He is twenty-six years old, an American, five feet eleven inches in height, and weighs 147.5 pounds. The patient called after his first eruption, but there was no evidence of the condition, and his healthy appearance and otherwise normal state made me somewhat skeptical of his statement. Two of the attendants employed at the same bath, however, fully confirmed his description of his first attack, and the details were interesting. Just after rubbing a patron of the bath one of the other attendants remarked that the patient was "sweating blood" between his shoulders, and wiped off the sweat with a towel. The towel was stained with the secretion. The sweating persisted for fully half an hour, leaving the skin reddened for quite an hour after that. The patient was advised to send for me as soon as another attack occurred, and also to note any untoward experience or sensation on his own part. Meantime it was ascertained that the father was subject to similar attacks in his youth. Neither father nor son, however, was a hemophile. The man himself was normal in every way. Although of a slender frame he was well made physically, and, on examination of his chest and heart, I found him perfectly normal. The urine showed no unusual evidence. Fully two weeks after the first attack I was called to the Turkish bath to see the patient in an acute attack. He had been exposed in the hot room of the bath, but had done no rubbing.

He was in no way distressed, except by his desire to hold the eruption for me to see. There was a marked scarlet eruption, involving the knee and the upper third of the right leg, arranged in a triangular manner with the base of the figure at the knee. The eruption was almost dense in its character, but here and there it was mottled. The appearance presented was that of an abraded skin, which on closer examination appeared to be, what it most likely was, a diffuse hemorrhage into the skin. There were absolutely no subjective symptoms, and there were no signs of swelling or of inflammation, simply the startling scarlet redness of the eruption. A sketch was rapidly made of the patch, which faded while this was being done. There had been no sweating with this eruption, but the patient assured me that the former attacks had been preceded and followed by just such an eruption. At the time I was called the eruption had been present for an hour. It was fully an hour under observation, and the patient assured me subsequently that it lasted fully an hour after his leaving me.

In fading, the patches became broken, fading first in the center, until finally only the margins were apparent. Between the first attack and the one here described the patient informed me that he had had one on the chest.

Just nine days subsequent to the attack described the patient reported, with a two-ounce bottle filled with a fluid the color of ordinary carmine ink. This he stated had been collected from his back during an attack the night before, which had lasted longer than any of the preceding attacks, and which, for the first time, had left him weak and with pains in the joints. The fluid was examined by Dr. Pothier, the pathologist of Charity Hospital, and found to contain a mass of broken-down epithelial cells and fibers of cotton, stained red. There were no blood-corpuscles. Acids produced no reaction, and alkalies rendered the liquid colorless. Chemic agents, iron, etc., gave no reaction for blood. The staining of the fibers and the absence of blood-corpuscles or coloring-matter of the blood argued for a true chromidrosis. There was no suspicion of fraud on the part of the patient, and no occasion for it. Besides, the testimony of three other individuals who had witnessed the previous three attacks, and of one of these who twice had wiped off the sweat and had finally collected the fluid, must be considered reliable. Moreover, the patient did not wear colored underwear, but gray worsted and flannel mixed. The patient had been an attendant in the same bath for nearly a year, and seemed to have been affected in no other way by this new occupation. He had taken no drugs for an indefinitely long period preceding the eruptions. The change of occupation and the physical exertion incident to the rubbing at the bath seem alone to determine the cause of the eruption. The hereditary tendency might be remarked, but, of course, is to be qualified accordingly. The case is of some clinical interest from the sex and age of the patient, and from the concurrence of the two generally accepted reflex disturbances of the sweat-glands.

Under my advice the patient left the Turkish bath, and since changing his occupation to one of out-door life he has had no recurrence of the affection, although over two months have elapsed.

124 Baronne Street.

MEDICAL PROGRESS.

The Composition of Expired Air and its Effects upon Animal Life.—In an interesting communication presented at a recent meeting of the National Academy of Sciences, and a summary of which appears in *Science*, N. S., vol. i, No. 18, Drs. D. H. Bergey, S. Weir Mitchell, and John S. Billings detail the results of an investigation into the composition of expired air and its effects upon animal life. It was found that the air expired by healthy mice, sparrows, rabbits, guinea-pigs, or men contains no peculiar organic matter that is poisonous to the animals mentioned (excluding man), or that tends to produce in these animals any special form of disease. The injurious effects of such air appeared to be due entirely to the diminution of oxygen or the increase of carbon dioxid or to a combination of these two factors. It seemed very improbable that the minute quantity of organic matter contained in the air expired from human lungs has any deleterious influence upon men who inhale it in crowded rooms, and hence it is probably unnecessary to take this factor into account in providing for the ventilation of such rooms.

In ordinary quiet respiration, no bacteria, epithelial scales, or particles of dead tissues are contained in the expired air. In the act of coughing or sneezing such organisms or particles may probably be thrown out.

The minute quantity of ammonia, or of combined nitrogen or other oxidizable matters found in the condensed moisture of human breath appears to be largely due to products of the decomposition of organic matter which is constantly going on in the mouth and pharynx.

The air in an inhabited room, such as the hospital-ward in which experiments were made, is contaminated from many sources besides the expired air of the occupants, and the most important of these contaminations are in the form of minute particles or dust, which often contains micro-organisms, including some of the bacteria which produce inflammation and suppuration, and it is probable that these are the only really dangerous elements in this air.

The experiments in which animals were compelled to breathe air vitiated by the products of either their own respiration or by those of other animals, or were injected with fluid condensed from expired air, make it improbable that there is any volatile poisonous matter in the air expired by healthy men and animals, other than carbonic acid. It does not necessarily follow that a man would not be injured by continuously living in an atmosphere containing 2 parts per 1000 of carbon dioxid and other products of respiration, cutaneous excretion, and of putrefactive decomposition of organic matters, because it is found that a mouse, a guinea-pig, or a rabbit seems to suffer no ill-effects from living under such conditions for several days, weeks, or months, but the evidence which has heretofore been supposed to demonstrate the evil effects of bad ventilation upon human health should be carefully scrutinized.

The effects of reduction of oxygen and increase of carbon dioxid, to a certain degree, appear to be the same in artificial mixtures of these gases as in air in which the change of proportion of the gases has been produced by respiration.

The effect of habit, which may enable an animal to live in an atmosphere in which by gradual change the proportion of oxygen has become so low and that of carbonic acid so high that a similar animal brought from fresh air into it dies almost instantly, has been observed before; but a continuance of this immunity produced by habit seems not to have been previously noted. Exceptionally such an immunity may either exist normally or be produced in certain mice, but the conditions upon which such a continuance of immunity depends are as yet unknown.

An excessively high or low temperature has a decided effect upon the production of asphyxia by diminution of oxygen and increase of carbon dioxid. At high temperatures the respiratory centers are affected when evaporation from the skin and mucous surfaces is checked by the air being satured with moisture; at low temperatures the consumption of oxygen increases, and the demand for it becomes more urgent.

The proportion of increase of carbon dioxid and of diminution of oxygen which has been found to exist in badly ventilated churches, schools, theaters, or barracks, is not sufficiently great to account satisfactorily for the great discomfort which these conditions produce in many persons; and there is no evidence to show that such an amount of change in the normal proportion of these gases has any influence on the increase of disease and death-rate which statistical evidence has shown to exist among persons living in crowded and unventilated rooms. It has been shown that the death-rate among soldiers is greater than among civilians of corresponding age, and that this difference is mainly due to diseases of the lungs occurring in soldiers in crowded and unventilated barracks. These observations have since been repeatedly confirmed by statistics derived from other armies, from prisons, and from the death rates of persons engaged in different occupations, and in all cases tuberculous disease of the lungs and pneumonia are the diseases which are most prevalent among persons living and working in unventilated rooms, unless such persons are of the Jewish race.

But pulmonary tuberculosis and pneumonia are caused by specific bacteria, which, for the most part, gain access to the air-passages by adhering to particles of dust which are inhaled, and it is probable that the greater liability to these diseases among persons living in crowded and unventilated rooms is, to a large extent, due to the special liability of such rooms to become infected with the germs of these diseases. It is by no means demonstrated as yet that the only deleterious effect which the air of crowded barracks or tenement-house rooms, or of foul courts and narrow streets exerts upon the persons who breathe it, is due to the greater number of pathogenic micro-organisms in such localities. It is possible that such impure atmospheres may affect the vitality and the bactericidal powers of the cells and fluids of the upper air-passages with which they come in contact, and may thus predispose to infections the potential causes of which are almost everywhere present, and especially in the upper air-passages and in the alimentary canal of even the healthiest persons; but of this there is as yet no scientific evidence.

The discomfort produced by crowded, ill-ventilated rooms in persons not accustomed to them is not due to the excess of carbon dioxid, nor to bacteria, nor, in most cases, to dusts of any kind. The two great causes of such discomfort, though not the only ones, are excessive temperature and unpleasant odors. Such rooms as those referred to are generally overheated; the bodies of the occupants, and, at night, the usual means of illumination, contributing to this result.

The results of this investigation, taken in connection with the results of other recent researches, indicate that some of the theories upon which modern systems of ventilation are based are either without foundation or doubtful, and that the problem of securing comfort and health in inhabited rooms requires the consideration of the best methods of preventing or disposing of dusts of various kinds, of properly regulating temperature and moisture, and of preventing the entrance of poisonous gases like carbon dioxid, derived from heating and lighting apparatus, rather than upon simply diluting the air to a certain standard of proportion of carbonic acid present. It would be very unwise to conclude, from the facts given in this report, that the standards of air-supply for the ventilation of inhabited rooms now generally accepted are much too large under any circumstances, or that the differences in health and vigor between those who spend the greater part of their lives in the open air of the country hills and those who live in the city slums do not depend in any way upon the differences between the atmospheres of the two localities except as regards the number and character of micro-organisms.

The cause of the unpleasant, musty odor which is perceptible to most persons on passing from the outer air into a crowded, unventilated room is unknown. It may in part be due to volatile products of decomposition contained in the expired air of persons having decayed teeth, foul mouths, or certain disorders of the digestive apparatus, and it is due in part to volatile fatty acids produced from the excretions of the skin and from clothing soiled with such excretions. It may induce nausea and other disagreeable sensations in specially susceptible persons, but most men soon become accustomed to it and cease to notice it, as they will do with regard to the odor of a smoking-car or of a soap-factory after they have been for some time in the place. The direct and indirect effects of odors of various kinds upon the comfort, and, perhaps also, upon the health of men are more considerable than would be indicated by any tests now known for determining the nature and quantity of the matters which give rise to them.

Cases of fainting in crowded rooms usually occur in women, and are connected with defective respiratory action due to tight lacing or other causes.

Other causes of discomfort in rooms heated by furnaces or by steam are excessive dryness of the air and the presence of small quantities of carbon dioxid, of illuminating gas, and, possibly, of arsenic, derived from the coal used for heating.

Deciduoma Malignum.—BEACH (*Annals of Surgery*, vol. xxi, No. 5, p. 539) has reported a case of deciduoma malignum and cites another. From a study of these and the literature of the subject he arrives at the conclusion that deciduoma malignum is a distinct variety of malignant tumor, having histologic elements and a clinical evolution that are absolutely characteristic. This neoplasm has well-established etiologic relations with pregnancy, and often with hydatidiform moles. On account of the rapidity of its evolution it is of the greatest importance to make an early diagnosis. When once recognized, and if there seems to be no metastasis, immediate action is necessary, and a radical operation should be performed. The only rational operation is the total extirpation of the uterus with its appendages.

Perforation of the Uterus after Abortion, with Prolapse of the Intestine.—MANN (*American Journal of Obstetrics*, May, 1895, p. 603) has reported a case in which, following self-induced abortion by means of a catheter containing a stylet, the uterus was dilated and its contents removed with the aid of a curet. It was found that the uterus was perforated, and through the opening a portion of lacerated small intestine had found its way. Celiotomy was performed, hemorrhage controlled, and the lacerations repaired, and the patient made a rapid and uninterrupted recovery.

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HAS THE REVIVAL OF SYMPHYSIOTOMY PROVED A SUCCESS?

IT has been claimed that symphysiotomy never died out, and therefore cannot be said to have been revived. This is true in one sense, but the term revival does not require that actual death should have taken place, it simply indicates a change from a state of depression to one of activity. There was one operation in 1858, another in 1860, a third in 1863, and a fourth in 1864, under which there were 3 women lost. From 1863 to 1866 there was not an operation in any part of the world. This interval of three years applies especially to Italy, but it was far longer in many other countries. The last operation in Germany was in 1852, and in France in 1860. There was no symphysiotomy in Berlin from 1815 to 1892, and none in Paris from that of Baudelocque, in 1833, to that of Pinard in the Clinique Baudelocque in 1892. To advance from 12 operations in Italy in 1891 to 85 in thirteen countries in 1892, and 149 in fifteen countries in 1893, looks very much like a revival. This was properly an exodus from Italy, where it had been tested and improved for twenty-six years under two persevering obstetric surgeons. The real advance under antiseptic management in Naples began in 1886, and our record for Italy since then gives 56 cases, with 4 women and 8 children lost. Having been asked as to the credit of the chief operators, we say that Professor Morisani lost 1 child, but no woman, under 17 operations; Professor Novi lost 2 children, but no woman, out of 10 cases; and Dr. Mancusi lost neither mother nor child out of 6 cases, making 33 operations, with a loss of 3 children. Neapolitan operators lost 2 women and 6 children out of 45 cases. Bologna added to the mortality by 2 operations, which were both fatal; that city had 4 operations in all her history, all of which proved fatal.

We may divide the history of symphysiotomy into three periods: the first, from 1777 to 1864, inclusive; the second, from 1866 to 1892; and the third, since the exodus from Italy, in February, 1892. In the first period, of 87 years, it is believed there must have been 150 operations in seven countries, viz., France, Germany, Belgium, Holland, Spain, Italy, and England. Spain and England had but 1 each, and the record of cases that can be relied on shows that about one-third of the women and two-thirds of the children were lost. Under this discouraging record of mortality the second period was introduced in 1866 by Professor Ottavio Morisani, of Naples, who still lives to see the improvement of results that he inaugurated. In this period there were 106 operations, all in Italy, with 20 women and 16 children lost. The improvement under a rigid antiseptic technique is shown by the fact that under the last 38 operations (1886–1891) there were but 2 women lost, or 5⅓ per cent.; while the infantile mortality was 10⅔ per cent.

The knowledge of this greatly reduced death-rate in Italy, the operations being almost entirely in Naples, caused the exodus of February, 1892, when, after an interval of thirty-two years, Professor Adolphe Pinard reintroduced symphysiotomy into France. His success soon caused an extension of the work into other countries in the following order: Germany, Austria, Russia, United States, Denmark, Brazil, Ireland, Switzerland, Holland, Canada, and India, all in the year 1892. It will be noticed that although Ireland, Canada, and India introduced the operation, England declined to repeat her experiment of 1782 until a later period.

In the year 1891 there were 12 operations, all in Italy, and in 1892 there were 85 operations in thirteen countries. Of the 85 women delivered 10 died, and of the children 24 were lost.

In 1893 operations were performed in fifteen countries to the number of 149, losing 19 women and 29 children.

In the United States there have been 75 operations, with a loss of 10 women and 18 children.

The best encouragement for the performance of symphysiotomy is to be found in certain centers where there have been many maternity cases in the hands of a few men. The Clinique Baudelocque has a staff of six obstetric surgeons, who up to December, 1894, had performed 48 operations, of which Professor Pinard had a credit of 25. He lost his ninth and seventeenth patients, or 8 per cent. of his cases, and the eighteenth child. The other five operators lost 2 women out of 23, and 3 of their children. The whole mortality is 8½ per cent., each, of the women and of the children. Professor Pinard says in his last report that of the 48 women 37 were "exclusively examined and cared for at the Clinique Baudelocque," and of these 37 only 1 died, and she of intestinal obstruction produced by a fibrous band; the children were all born alive.

In Professor Paul Zweifel's clinic, at Leipzig, there were 21 symphysiotomies in fifteen months prior to January 1, 1894. Of the 21 women Professor Zweifel operated on 18, and his three assistants on 1 each. No woman died and 4 children were lost; the children lost were delivered by the Professor.

The most encouraging work in symphysiotomy in the United States has been that of New York City, where 10 operators saved 19 out of 21 women, and 18 of their children. One of the 2 deaths was unvoidable, the patient being *in extremis* when brought to the hospital; the other died of sepsis due to the operation. It is fair to New York to count out the first case of Professor W. T. Lusk and give her 20 operations with 1 woman and 2 children lost, a mortality respectively of 5 and 10 per cent. There is much credited against this form of operation that is due to the prior condition of the patient, or to injuries produced in a hurried delivery of the fetus. There have been 80 deliveries in North America, with 10 women lost, and of these 10 only 4 can be fairly charged against the operation *per se*.

Symphysiotomy is an alternate of craniotomy, and not of Cesarean section, although the performance of the latter in preference may in exceptional cases become one of wisdom. In three such questions of choice in Philadelphia, Cesarean section was selected in two, and all of the women and children were saved. The limit of symphysiotomy is very marked in our country, and, as a rule, extends from a conjugata vera of 2¾ inches to one of 3¼ inches, when the pelvis is flat and the fetus of average size. But in the justo-minor pelvis, or when the fetus weighs from 9 to 12 pounds or more, the operation may be called for when the measure is 3½, 3¾, or even 4 inches. The average weight of male children delivered under symphysiotomy in the United States has been found to be $8\frac{7}{16}$ pounds, and of females $8\frac{1}{16}$ pounds; so that it is folly to limit the conjugate to a measure below 2¾ inches if the child is to be delivered either by the forceps or by version without its death. Thus far there has been too large a proportion of children lost in most countries, and attention should be specially directed toward the best method of delivering them alive.

Paris and London are in direct antagonism in regard to the choice between embryotomy and symphysiotomy. Professor Pinard advocates the abandonment of infantile destruction as a preparation for delivery, and hopes in the perfection of symphysiotomy to accomplish his purpose. London, voiced by Dr. Peter Horrocks and other Fellows of the Obstetrical Society, takes an entirely opposite ground, as shown by a discussion at the meeting of March 7, 1894. England prefers craniotomy to pubic section, and several Fellows claimed that there were less immediate and subsequent danger and disability after the Cesarean section than after symphysiotomy. There would be good reason for advocating this preference if English operators had the success of a Sänger or a Zweifel, but London Cesarean sections in the recent past have had a mortality of 38 per cent. in the women and 27 per cent. in the children; and as this is since January 1, 1886, it may be considered a fair estimate. Dr. Horrocks, to throw discredit upon symphysiotomy, made the following statement: "His own experience consisted in witnessing one case. His colleague, Dr. Galabin, operated. The pubes were brought together by means of a wire suture, but although both mother and child survived, the mother has never been able to do any work since, and was, he had heard, at the present time in an infirmary." On tracing up the patient after the Society meeting it was found that she and the baby were sound and well, but that she had had a mammary abscess; the case has not yet been reported, although more than a year has passed, and the statement of Dr. Horrocks stands against it. The President of the London Obstetrical Society rated the mortality under symphysiotomy at 10 per cent., and thought that the Cesarean operation, when properly performed as to time and circumstances, would be attended with no greater loss. It is true that Professor Murdoch Cameron did save 27 out of 30 Cesarean subjects in Glasgow, but the general obstetric operators of England lost 16 out of 32 and 10 children. President Herman,[1] already quoted, had lost 4 women out of 7, and 3 children, and Dr. Cullingworth lost 3 women out of 5. Of 14 women operated upon "early," 5 died, or 36 per cent; and of 4 operated on "prior to labor," 1 died, or 25 per cent. We fail to see what ground the Fellows of the Obstetrical Society of London have for claiming that they can save nine Cesarean women out of ten, even under conditions classified as "favorable" Our mortality in the United States is far greater than this, but in cases operated upon before labor, or early in it, our losses have been much lower than in England.

We look upon symphysiotomy in America as an established operation. We have no prejudices against it or in its favor. We do not object to repeating the operation on the same woman. We are opposed to craniotomy, not upon religious grounds, but because "it is a relic of barbarism," and we believe that the unborn fetus has a certain claim to live. When the pelvis of a woman is too small for delivery of a living fetus, as shown by a failure with the forceps under a fair trial, we believe in saving the fetus by a subosseous pubic section. If a woman can deliver herself when her children are small, or can be delivered by forceps, what is to be done when the fetus is a little too large for a natural or an instrumental delivery? England says perforate the head, as there is no danger to the mother; we say separate the symphysis, so that a living child may be delivered, and under such precautions that the mother shall run but a minimum measure of risk. We hope in time to reduce the mortality both in women and children by a better experience and by securing the patients in good season. We are opposed to experimenting with symphysiotomy in cases of rachitic dwarfs having a conjugate under measure, as the fetus is likely to be lost under version or forceps-pressure. In all doubtful cases of minimum measure it is safer to deliver under Cesarean section, performed early, and, better still, before labor has commenced.

THE PROPHYLAXIS OF TUBERCULOSIS.

SINCE the discovery of the tubercle-bacillus a rather warm contention has been waged about the precise importance that should be attached to this micro-organism in the etiology of tuberculosis. Those that at first denied the bacillus any other relation than that of mere accidental association with the tuberculous process have been gradually compelled to recede from their original extreme position, but they still maintain a fondness for their earlier views, and persist in ascribing a preponderant importance to the individual predisposition, and assume as a primary condition the existence of an undefinable morbid state favoring the lodgment and activity of the bacillus. On the other hand, it must be admitted that the extreme views of the ultra-bacteriologic school of pathologists have also undergone some modifications, so that micro-organisms are no longer considered the *sole* factors in the development of disease-processes. While it is universally conceded that there can be no tuberculosis without the tubercle-bacillus, it will not be denied that a certain deterioration of health, a certain lowering of physical vigor, a certain depreciation of the vital resistance, is a very important predisposing factor in the development of the disease—as of disease in general. It will thus be seen that there has taken place an approximation of extremes of view, a gradual harmonization of discordant opinions. The importance of a proper recognition of the relative significance of exciting and predisposing causes must be obvious, as upon it will depend the selection of the appropriate prophylactic measures to be instituted.

One of the most earnest and persistent advocates of the necessity of adopting means to prevent the dissemination of tuberculosis is CORNET, who has shown that the mortality from this disease has diminished directly as such prophylactic steps have been taken.

At a recent meeting of the Berlin Medical Society, CORNET (*Berliner klinische Wochenschrift*, 1895, No. 20, p. 430) took issue with the doctrine of the ubiquity of the tubercle-bacillus, with the resultant hopelessness of prophylactic measures directed against the micro-organism. Intra-peritoneal inoculation of guinea-pigs with dust obtained from open places as well as from apartments, even when occupied by tuberculous patients, if care were taken in the disposition of the sputa, failed to give rise to infection. All of the evidence shows that the tubercle-bacillus is a strictly parasitic organism, finding outside of the human body only conditions unfavorable for its existence and development. Even at the temperature necessary for its growth, and in a suitable medium, it is soon displaced by the ordinary saprophytic organisms. The tubercle-bacillus adheres tenaciously to moist surfaces, so that the greatest danger is from drying of the expectoration and other discharges of tuberculous patients, and in the degree that this is prevented the dissemination of the disease can be restricted with almost mathematic accuracy.

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[1] Dr. Herman has recently reported 11 operations, with 6 women lost; the cases having a favorable prognosis recovered.

The prevalence of tuberculosis is probably not so great as is usually conceived. Although responsible for a large number of deaths, it must be remembered that the disease has an average duration of about three years, and it is only during this time that it is capable of transmission by its victims. The proportion of cases of tuberculosis among the population is far less than that of the number of deaths from tuberculosis among the total mortality. It cannot, therefore, be said with truth that all persons live in the midst of tuberculosis.

Statistics show that the proportion of tuberculous patients varies very considerably at different periods of life. Thus between 5 and 10 years of age the proportion among males in Prussia is 1 to 2179; between 30 and 40, 1 to 94; and between 60 and 70, 1 to 43. These figures include all varieties of tuberculosis, some of which are little likely to transmit the disease. Under any circumstances the prevalence of tuberculosis is not so great as to preclude the possibility of good results from prophylactic measures. What can thus be accomplished is perhaps best illustrated by the comparative statistics of penal institutions, hospitals for the insane, and among the religious nursing orders of Prussia, in which for different periods attention has been given to the separation of the infected from the non-infected, and to the care and disinfection of the sputa.

Thus it appears that from 1881 to 1887 there occurred in the prisons of Prussia among every 10,000 living from 146.6 to 174.7 deaths from tuberculosis, and in Bavarian prisons from 158.9 to 184.1 deaths; while from 1892 to 1894 there occurred in Prussian prisons 81.2 deaths, and in 1892 in Bavarian prisons (in which prophylaxis was less efficiently carried out) 129.5 deaths. Similarly in Prussian hospitals for the insane there occurred from 1881 to 1887 between 180.8 and 198.5 deaths from tuberculosis per 10,000 living, and in Bavarian hospitals from 200.4 to 224.7 deaths per 10,000 living; while in 1891 there occurred in the former 156, and in 1891–92 in the latter 201.3 deaths per 10,000 living.

Among the religious nursing orders in Prussia, while there occurred in 1881–82 among every 10,000 living 114 deaths from tuberculosis, there occurred in 1893–94 but 67 deaths in the same number. These figures clearly show a diminishing mortality from tuberculosis, after the adoption of the most simple prophylactic measures. Between 1875 and 1887 the general mortality from tuberculosis in Prussia averaged about 31 deaths among every 10,000 living. From the year 1887 there has been a gradual decline to 25 per 10,000 in the year 1893. A similar reduction has taken place in Hamburg, where also prophylactic measures were actively carried out. As compared with other parts of Germany and with Austria, where such measures have been neglected, or were only undertaken late, the contrast is most striking. That the improvement is not due to other factors is shown by the fact that similar improvement has not been observed elsewhere, where corresponding prophylactic measures have not been adopted.

The obvious inference from all of the facts is, that whatever, and to what degree, other influences play a part in the etiology of tuberculosis, none is so definite and none so directly open to attack as the tubercle-bacillus, and it thus becomes the serious duty of the medical profession to avail itself of every means likely to prevent the dissemination of this deadly parasite.

EDITORIAL COMMENTS.

The Significance of Calcium in Diabetes Mellitus.—That glycosuria sometimes results from disease at the base of the brain and in the sequence of profound lesions of the pancreas has been definitely established, but this condition is wanting in many of the symptoms of diabetes mellitus. In conjunction with the presence of glucose in the urine the most marked manifestations of true diabetes relate to the nutrition, and it seems a justifiable inference that there exists a profound disturbance of the bodily metabolism. An interesting confirmation of this view is afforded by the report by Grube (*Münchener medicinische Wochenschrift*, 1895, No. 21, p. 487) of a case of diabetes in a man, twenty-five years old, a brother of whom had died of diabetes, and who, upon the suggestion of an acquaintance, took daily a teaspoonful of powdered egg-shells, with the result of a notable gain in weight and freedom from troublesome symptoms, although the amount of urine and the proportion of sugar were not diminished. Upon the basis of this observation a combination of calcium carbonate and calcium phosphate in the proportions found in egg-shells was administered in quantities of sixty grains daily, and the improvement was maintained. It has been pointed out that the phosphates are eliminated by the kidneys, and by the bowel in diminished quantity, in diabetes, and that, besides, diabetic patients receive a deficiency of calcium in their diet. The question is raised whether or not the profound nutritive changes of the disease may not in part be attributed to this condition. Increase in weight was also observed in the sequence of the administration of powdered egg-shell in a case of diabetes in a man, thirty years old, whose father, brother, and sister had died of diabetes. Similar improvement also took place in a third diabetic, forty-one years old, to whom was administered a combination of calcium carbonate and calcium phosphate. Observers have shown that fasting persons excrete an excess of lime, and so do patients suffering with osteomalacia. In the last-named condition and in diabetes the alkalinity of the blood is diminished, and this may lead to a breaking up of calcium combinations in the body. Further, a clinical connection between these two affections has been observed by a number of authorities. In the first of the cases here related the patient complained of pains in the tibia, and the question is raised whether or not these bore any relation to the increased excretion of calcium.

Well Done!—Prior to the Commencement-week of the Pennsylvania University medical men were somewhat puzzled to know who was a certain Dr. E. Grewer, whom the Philadelphia newspapers, with customary discretion, were all saying would deliver the "toast of welcome" at the anniversary of the class of '74. One wondered who this seemingly very important personage was. At last it was noticed that the gentleman was a "Lost-Manhood-Restored" newspaper advertiser, and then the mystery and the newspaper enthusiasm were explained. In view of the publicity of the announcement we think it but just to make public the fact that by the inadvertence of the secretary of the class, the doctor, "whose specialties are Chronic, Nervous, Skin, Heart, Womb, and Blood Diseases," who had been allowed to subscribe, and to whom a badge had been given, was finally not permitted to appear as a member of the class. His badge was reclaimed and his money refunded.

Medical Advertisements in Lay Publications.—We are glad to hear of yet another publication that exercises a censorship over the advertisements offered it. This is the *Ladies' Home Journal*, which declines to accept paid announcements of a "medical, remedial, or curative nature," even including plasters, from an unwillingness to assume even implied sponsorship for anything that might be in the slightest degree improperly suggestive, or that, used by the ignorant or uninformed, might be capable of physical harm. That this policy—even if nothing more than politic—has been well chosen, is shown by the fact that the *Journal* has an enormous circulation among the best people, and is altogether a most successful and profitable enterprise. At this time, when all forms of quackery find ready prey in the credulous and the ignorant, it is gratifying to realize that there are still individuals and concerns whose ethical sense is not subservient to pecuniary considerations, and that their action is sustained by a large constituency.

The Sterilized Milk and Ice Society of Philadelphia has resumed the good work begun last summer, having already opened two depots for the sale at cost of milk, sterilized, modified and pure, and ice. One of these depots is at the main office and sterilizing plant of the society, at Hope and Dauphin Streets, the other at Fifth and Bainbridge Streets, in the heart of the slums. Other depots will be opened as soon as sufficient contributions have been received. The work of this organization is in the highest degree philanthropic and life-saving. Upon the one hand it does not pauperize the beneficiaries of its activity, while on the other hand it places within the reach of the poor, and particularly the children of the poor, a most important—in fact an indispensable—article of food, properly prepared and preserved. This good work should receive the cordialy smpathy and substantial support of the whole community.

SELECTIONS.

PHYSICAL TRAINING vs. ATHLETICISM.

IT is certainly gratifying to me, in recalling the experiences which I have undergone in the last fifteen years, fighting the questionable tendencies of athletics, at first almost single-handed, to hear the comments I have listened to this evening. For a long time I have thought the medical profession was a little bit benighted on this question. To me physical training is nothing but applied physical hygiene. I have given suggestions and hints to that end to the young men who have come under my observation. Unfortunately for the cause ot physical training, this subject of athletics has assumed undue importance. No doubt our colleges have allowed this subject to assume a bias in the wrong direction. They have encouraged the spectacular and sporting side of the subject and almost ignored the hygienic and educational aspect. They have nursed and fostered the highest grade of scholarship and extreme athleticism. These are incompatible in the same individuals; therefore, the athletes and scholars are contending for fame in opposite directions—one class is striving for distinction by the supreme efforts of the mind and the other class by the supreme efforts of the body; and in my opinion neither class is doing what it ought for the advancement of education in its broadest and noblest sense.

It seems to me time to return to the old Greek idea of unity in development, unity in education, and to take a rational view of the claims of both body and mind, and educate them both together. I see no way of doing this but by recognizing physical training, and putting it on the same footing as any other department in college. When we consider one or two phases of this whole movement, to me it is simply shameful. Harvard and

Yale to-day are each spending over $50,000 a year, and employing thirty men, to bring fifty stalwart fellows into condition to meet their foremost rival. On the other hand, the departments of physical training in each institution are spending one-fifth of that sum, and have one-fifth that number of men, to look after the physical training of the remaining students—98 per cent., or about 3000, at Harvard University. Now the absurdity of this position is only paralleled by assuming that some few well-chosen speakers should be selected and trained for the rhetorical contests, and the rest of the students be excused in order that they might attend the rehearsals and applaud the progress of their companions. It seems to me that this is radically wrong. In making this assertion I want to remove from your minds, however, the idea that there is any institution in this country that is carrying physical training to excess. If you could have an opportunity of meeting all of these men as they come to the colleges from the preparatory schools, see them in a state of nature, how impoverished they are—with poorly developed chests, crooked spines, and emaciated limbs—you certainly would not consider that physical training was being carried to excess. In fact, I invite you to come to Harvard and look over the photographs of these men, and I think you will be prepared to meet the arguments that physical training is being carried to excess in any of our institutions. On the other hand, our scholarly men are suffering for the need of systematic physical exercise, and the majority of our students at the present time do not show permanent signs of gain. Until our scholarly men are encouraged to attend the gymnasium in view of aiding their mental development, and not consider it, as many do, something detrimental to the best intellectual efforts, and when the majority of students can show improvement in their physique, it seems to me it will be time to talk about an excess of physical training. It is a misfortune to have an athletic question and a physical-training question coupled together in the minds of our people. It seems to me the thing for us to do who are interested in the physical welfare of students is to use our utmost effort in the direction of staying the tide of this concentrated athleticism, and try to give to the masses something of the time and the energy now devoted to the special training of the favored few.—DR. SARGENT, of Harvard College, *Boston Med. and Surg. Journ.*, June 6, 1895.

A NEW PHASE OF MEDICAL CHARITY.

AT a recent anniversary of one of the large and needy hospitals in the millionaire districts of this city a speaker filled with enthusiasm for the benefits of the present hospital-system is reported to have said that one of its greatest boons was the saving of expense to the rich man. In proof of such an unjust and outrageous claim he bolstered his statement by comparing the items of expense when a patient was treated at an ordinary hotel by his regular medical attendant with those in a well-equipped charity-institution supported by the liberal contributions of a Christian organization. Instead of a daily expenditure of $5 for hotel-accommodations, $5 for a trained nurse, $5 per visit for the physician, and $5 more for the board of the nurse, not to speak of the cost of the medicines from an expensive pharmacy, the patient who entered the hospital in question needed only to pay for his board and a private room. All other outlays were unnecessary and were included in the one item named. Naturally in this connection we think of the physician, who is the only one whose services are virtually considered of no account. The high price of the room added to the donations of the charitable enable the hospital to make a handsome profit, even including the general expenses for nurses, medicines, instruments, and dressings. The attending physician or surgeon, who might be looked upon as the real personage who makes any hospital what it is, is not only entirely ignored, but a deliberate attempt is made to swindle him and his outside associates in attempts at gaining a legitimate livelihood. It would appear from all this that the evolution of medical charity is distinctly in the direction of eliminating the doctor. Another step in this direction would be for hospital-managers to go into the wholesale proprietary-medicine business and prescribe remedies on their own account free of cost to the patients. Why should not money be invested as well and as profitably in medical charities and millionaire clinics, as in railroads, wheat, and mining stock? The men who run the hospitals can command all the needful capital on the hypocritical plea of charity to the poor, can obtain medical services free, can build magnificent edifices, endow beds for cast-off servants, beg for church-subscriptions, and what is now to hinder them from running the medical-charity business entirely in their own interests? They are doing it all the time, though less openly than the distinguished speaker in question has so frankly admitted.—*Medical Record*, June 1, 1895.

REVIEWS.

SYSTEM OF SURGERY. Edited by FREDERIC S. DENNIS, M.D., Professor of the Principles and Practice of Surgery, Bellevue Hospital Medical College, etc., etc., assisted by JOHN S. BILLINGS, M.D., LL.D., Edinburgh and Harvard; D.C.L. Oxon.; Deputy Surgeon-General U.S.A. Vol. I. The History of Surgery, Pathology, Bacteriology, Infections, Anesthesia, Fractures and Dislocations, Operative Surgery. Profusely illustrated. 8vo., pp. 880. Philadelphia: Lea Brothers & Co., 1895.

As this wonderful century draws toward its close the activity of bookmaking seems rather to wax than to wane. It could hardly be otherwise, with the steady progress of modern research and the changes thereby wrought in surgical theory and practice. The surgery of to-day is not the surgery of twenty years ago. Yet, although the teachings of the earlier time are so largely set aside and the practice so modified, there remains intact what may be called a body of surgery (as the older theologians were fond of speaking of a body of divinity) which is based upon observation and experience. Only in interpretation of phenomena, by the better light we have, do we differ from those who went before us.

The *System of Surgery*, the first volume of which we have now to notice, has among its contributors some of the most prominent surgeons and surgical pathologists of the present time, and may be expected to set forth the latest aspects of the science and the art.

By way of introduction, there is a chapter by Dr. J. S. Billings on the History and Literature of Surgery. It is rather a catalogue *raisonné* of surgeons and surgical writings, than an account of the development and progress of the science and art. As Macaulay said: "What is told in the fullest and most accurate annals bears an infinitely small proportion to what is suppressed. No history can present us with the whole truth; but those are the best histories which exhibit such parts of the truth as most nearly produce the effect of the whole." Dr. Billings was, of course, hampered by the necessary limits of the space assigned him, and his work had to be somewhat of the nature of a compilation.

Of the remaining eleven articles there are three which belong wholly to the present period. These are: One on Surgical Pathology, including inflammation and the repair of wounds, by Professor Councilman, of the Harvard Medical School; another on the General Bacteriology of Surgical Infections, by Professor Welch, of the Johns Hopkins University; and one by Professor Gerster, of the New York Polyclinic, on the Technique of Antiseptic and Aseptic Surgery. The two former are of exceeding interest. We think they would have been available to a larger class of readers if the authors had entered more into the elementary details of the subjects. Many terms are used and many processes mentioned which must be wholly meaningless except to those who have either had training in bacteriology or have at hand other sources of information. Professor Gerster's article is not open to this objection. It is both full and practical. We note that he says (p. 712) that the ordinary wearing apparel of surgeons and nurses "notoriously contains large quantities of dust and dirt," and must be doffed before proceeding to an operation. Would it not be better that surgeons and nurses should avoid this necessity by frequent changes and by special care in the cleansing of their garments? A condition so easily corrected ought not to be allowed to be habitual.

Four of the articles in this volume are devoted to what may be called surgical diseases. Professor Nancrede, of Detroit, discusses the Symptoms, Diagnosis, and Treatment of Inflammation, Abscess, Ulcer, and Gangrene; introducing also under this head, as it seems to us somewhat oddly, Burns and Scalds, Wounds, Traumatic Delirium, Traumatic Hysteria, Hemorrhage, and Hemophilia. The subject of Shock, very casually noticed in two of the other articles, is, we think, of sufficient moment to have had much fuller discussion.

Septicemia, Pyemia, and Poisoned Wounds are treated by Professor Carmalt, of New Haven; Traumatic Fever, Erysipelas, and Tetanus, by Professor Warren, of the Harvard Medical School; Rabies, by Professor Biggs, of the Bellevue Hospital Medical College. All of these articles are interesting, but would be more valuable to the general reader if they were in greater detail.

There remain four chapters on subjects belonging to what we call practical surgery. Professor Conner, of Cincinnati, has contributed one on Gunshot Wounds, which is up to date. We note that on p. 541 he says that a bit of cloth, carried in along with a ball, "if left in place is certain to be a source of infection." With this we quite agree; but on p. 455 he says "if the bit of cloth is not removed or spontaneously extruded, it may be encapsulated and thus rendered harmless."

Fractures and Dislocations are discussed, but very briefly and in general terms, by the editor, Professor Dennis. We can hardly think that this article fairly represents the practice of New York surgeons of to-day; if it does, they are behind those of Philadelphia. We are told (p. 545) that in fractures of the leg, "if the surgeon prefers a splint instead of the plaster-of-Paris bandage, the classical double-inclined plane of McIntyre is one in common use." We have never seen this splint employed in the United States; but we have seen fractures of the leg treated with apparatus on the same principle, with lamentable results. On p. 548, Salter's swing is represented and commended; but there are several far cheaper, better, and simpler forms of apparatus for the same purpose in use in this country.

The chapter on Anesthesia, by Professor H. C. Wood, deals with the subject wholly from the standpoint of a laboratory student, and not from that of a clinical observer. A very large experience with the various agents in the operating theater has convinced us that experiments on animals afford very unreliable data as to the effect of anesthetics upon the human subject; and there are many practical points which have forced themselves upon our attention to which Professor Wood makes no allusion. Not a word is said as to local anesthesia in either of its forms.

The volume concludes with an article on Operative Surgery by Professor Stephen Smith, of New York. This author is well known in connection with this special subject, and we need only say that his present work is in keeping with that which he has done in the past.

Any work on General Surgery, offered to the profession at the present time, must encounter comparison with formidable rivals already in possession of the field. The one before us has the advantage of able authorship, and is one of very attractive appearance, with clear type, good paper, excellent illustrations, and convenient size. We predict for it an abundant success, but not as a textbook or as adapted for the common run of readers. In a second edition it seems to us that matter might be added in a convenient form which would enable even the less advanced to avail themselves of the mass of information contained in it.

TWENTIETH CENTURY PRACTICE. An International Encyclopedia of Modern Medical Science. By Leading Authorities of Europe and America. Edited by THOMAS L. STEDMAN, M.D., New York City. In twenty volumes. Volume II. Nutritive Disorders. New York: William Wood & Co., 1895.

THE second volume of this prompt-appearing work is devoted, so it is somewhat strangely said, to "nutritive disorders," by which we will charitably suppose is meant the disorders of nutrition. The 739 pages are made up as follows:

Addison's Disease and Other Diseases of the Adrenal Bodies, by Sir Dyce Duckworth, of London, 31 pages.

Diabetes Mellitus, by Carl Von Noorden, of Frankfort, 154 pages.

Rheumatism, by T. J. Maclagan, of London, 143 pages.

Gout, by Henry M. Lyman, of Chicago, 182 pages.

Arthritis Deformans, by A. E. Garrod, 64 pages.

Diseases of the Muscles, by Dujardin-Beaumetz, of Paris, 48 pages.

Obesity, by M. J. Oertel, of Munich, 103 pages.

A good index of thirteen pages should be mentioned, and while upon the subject, we beg the publishers, with the completion of the work, not to fail to add a thorough general index of the entire twenty volumes.

We do not wish to seem or to be hypercritical, but, whether owing to the fact that many of the original writers of this volume were using a foreign language, or whether their articles were carelessly translated, there occur entirely too many ungrammatic and inelegant expressions. Such expressions as "a certain diagnosis can be arrived at," "the following was one that have come under my notice," are to be found on nearly every page of certain articles. Some sentences become almost an unintelligible jumble of words. For example, and by no means the worst:

"The theory which regards arthritis deformans as a mixed disease resulting from the blending of rheumatism and gout, which is identified with the name, and supported by the great authority of Jonathan Hutchinson, is intimately mixed up with the hypothesis of the existence of an arthritic diathesis which serves as a basis upon which rheumatism and gout and also articular disorders of other kinds may be developed."

Here is a complete—supposably complete—sentence separated from all others by periods: "And in the first place whether it is a primary or a secondary myositis—usually a matter of but little difficulty."

Throughout the work one sees manifold illustrations of the common blunder as to the use of the terms *case* and *patient*. How in the name of nomenclature can "a case" be "removed," or be "brought in," or be "seen." A *case* is a single instance or example of disease, the history or report of a *patient's* disease, treatment, etc.

We cannot help asking: If *anæmia* and *hæmophilia* and *dysmenorrhœa*, why, then, not also, *encyclopædia* and *gangræne* and *hæmorrhage?*

Other common blunders that should not have occurred in an encyclopedic work are the misuse of *should* and *ought*, and, worse yet, the misuse of *where* and *when*. "Where greater heat is called for," is an example. It is here not a question of location or position but of time, and *when* is the word that should have been used.

Lastly, we would suggest to the proof-reader an hour's diligent study of Teall's excellent little book on *The Compounding of English Words.*

As to any extended criticism of the scientific character of the contributions, neither our space nor our ability will much permit. However, we cannot forbear another allusion to a "twentieth-century" discrepancy. We very much fear that a decidedly nineteenth-century mistake has been made in not securing, in all cases, twentieth-century contributors, *i. e.*, men whose "*floruits*" will be placed at any rate in the early decades of that period. The first volume, with the exception of two or three important articles, was written by the old-time nineteenth-century favorites, who have turned up for years with praiseworthy regularity in all new enterprises, but who are in reality veterans of the past, in whose vessels no twentieth-century sap will ever run. The second volume shows a most lamentable lack of editorial discretion. Why, in the name of Duchenne, of Cruveilhier, of Erb, and of many others, was the selection made of that dear old therapeutic optimist—peace to his ashes!—Dujardin-Beaumetz, to write upon such a twentieth-century subject as diseases of the muscles? Where, dear editor, were some of your New York colleagues? It is really too aggravating, when one thinks of the scores of available men who in Europe and America have been at work on this important subject. The bibliography given after the section is—well, not twentieth-century! but what one might expect under the circumstances.

But the worst "chestnut" in Vol. II is the elaborate but disjointed article on rheumatism by Dr. Maclagan, of London. That he was the author of a special work on the subject (1881) should have been sufficient to disqualify him, deserving well, though he does, at our hands for his strong advocacy of salicin. What will the teachers of the year 1900 say of the eight pages on the miasmatic theory of rheumatism? What will the more intelligent of them say *now?* We do not know Dr. Maclagan; we do not even know his age, but he lives in thought away back in the fifties, and is a mental contemporary of J. K. Mitchell, the elder Pepper, and Sir Henry Holland. The article of von Noorden on Diabetes saves Vol. II from mediocrity.

They manage these things better in France. The *Traité de Medecine*, recently completed, was edited by nineteenth-century men, but it was *written*, almost every page of it, by young twentieth-century men. But there is yet time, and the list of coming contributors gives definite promise of it, that in the succeeding volumes the shadow of a great event, so loudly but as yet in great part so falsely, proclaimed in the title, may fall on the series.

SOCIETY PROCEEDINGS.

AMERICAN ASSOCIATION OF GENITO-URINARY SURGEONS.

Ninth Annual Meeting, Held at Niagara Falls, May 28 and 29, 1895.

First Day—May 28th.

Dr. L. Bolton Bangs, of New York, read a paper entitled

TUBERCULOSIS AND NEOPLASMS OF THE BLADDER: SURGERY OR HYGIENE?

He reported three cases of tuberculosis of the bladder, which he stated were typical of many, and in which the hygienic treatment was followed by very beneficial results. He stated that among the many troublesome cases of disease of the bladder that we are called upon to treat, none is more difficult than those due to tuberculous infection. At first the symptoms in these cases are often obscure and so similar to those produced by other morbid conditions that the diagnosis is frequently doubtful, and in many even impossible. Later on the clinical picture becomes so characteristic that all doubt as to the diagnosis is removed. But at this stage treatment can effect but little, even in the mitigation of the sufferings of these patients, whose hope of cure is now out of the question. If, however, the disease can be discovered in its incipiency, and proper measures taken for its relief, it may be regarded as curable, certainly in the sense of being held in abeyance. Vitalization of tissue is what these patients need, and they require at least two years of good hygienic residence in a temperate climate; and besides climate they need occupation, for *ennui* seems to be almost as deteriorating as confinement to the house.

Surgical traumatism produced by overzealous efforts to relieve local symptoms seems to result in more harm than good. Such efforts are likely to put the unhappy patient still further below par and facilitate the development of other tuberculous foci, either in the same organ or in one more distant.

Dr. Bangs also reported three cases of malignant disease of the bladder, in which he stated that a cure also depends upon an early diagnosis. Unfortunately, in these cases many of the early symptoms are overlooked, or, if appreciated, are misunderstood. The patients themselves, because of the insidious onset of the disease, become accustomed to their first symptoms, and usually do not seek the advice of a medical attendant until the affection is well advanced. In conclusion, he stated that he has contrasted these two groups in order to present for discussion the points (1) that cases of incipient tuberculosis of the bladder should be subjected to hygienic rather than to surgical treatment, and (2) that in the incipient stages of neoplasms surgical treatment of the most radical kind should be instituted.

Dr. John P. Bryson, of St. Louis, said he was entirely in accord with the statements made by Dr. Bangs regarding the treatment of the tuberculous cases. In tuberculous cystitis perineal drainage is not to be recommended. In two of his cases the perineal wound became infected and failed to heal. The suprapubic route is altogether to be preferred when drainage is to be resorted to. In cases of vesical neoplasms the symptoms frequently come on late. If the new-growth is situated toward the fundus, or at any considerable distance away from the vesical outlet, there is no reason why we should get any symptoms of its existence for a considerable length of time, and the first symptom is likely to be hemorrhage.

Dr. Gardner W. Allen, of Boston, reported a case of tuberculosis of the bladder in which the symptoms entirely disappeared under hygienic treatment.

Dr. Bransford Lewis, of St. Louis, referred to a case of tuberculous cystitis in a farmer who had lived for several years on a farm in Kansas. He came to St. Louis, and there, under supporting treatment, rest, creosote, and cod-liver oil, the urine, which had been cloudy for three years, cleared up, and the man gained about twenty pounds in weight in three months.

Dr. Bryson said that as far as the internal treatment of these cases is concerned he has derived much benefit from the use of the simple hypophosphites. Cod-liver oil has not been particularly serviceable. He has seen no benefit from preparations of malt, and creosote has not in any way helped his patients. The climate of southern California seems to be particularly beneficial to these patients.

Dr. Eugene Fuller, of New York, said that he agreed that hygiene is the most important factor in the treatment of these cases. Many people are so situated, however, that they cannot change their residence, and then other sustaining measures are called for.

Dr. George Chismore, of San Francisco, expressed the opinion that the pain complained of by these patients is frequently due to the methods of search employed in endeavoring to discover the cause of the trouble. As a routine treatment, washing of the bladder is certainly not to be recommended, particularly in tuberculous cases. He agreed that early operation in cases of malignant growths of the bladder does not always effect a permanent cure.

Dr. William K. Otis, of New York, read a paper on

HEMATURIA.

After describing various chemic tests for the presence of blood in the urine, he stated that when the existence of hematuria has been definitely determined, the next important step is to ascertain in what portion of the urinary tract the lesion is situated. When the source of the hemorrhage is situated in the anterior urethra, between the meatus and the compressor urethræ muscle, and the blood is sufficient in amount, it will exude from the meatus, or may be pressed out by stripping the urethra with the finger. If the urine is passed in two portions, the first only will contain blood. When the hemorrhage takes place from the posterior urethra, between the compressor urethræ muscle and the internal sphincter of the bladder, the blood will not exude from the meatus, and if it is sufficiently large in amount the pressure will overcome the less resistance of the internal sphincter, and the blood will flow back into the bladder, making it difficult to decide whether its source is from the bladder or from the posterior urethra. In most of the cases, when the bleeding proceeds from the posterior urethra, there is considerable urgency in urination, although occasionally this symptom is absent.

When the seat of hemorrhage is within the bladder the entire urine therein contained will be intimately mixed with the blood, and if the hemorrhage is profuse, clots may form, which have a certain diagnostic significance if they are too large to pass through the ureters. Some consider the color of the urine an indication of the origin of hemorrhage; but this varies so greatly under different conditions, that it is unreliable, and of but little value in arriving at a diagnosis. Microscopic examination of the urine may show evidences of the presence of some new-growth in the bladder, while, on the other hand, the detection of casts containing blood-corpuscles indicates that the lesion is in the kidney. Should an examination of the urine fail to locate the source of the bleeding, we may proceed to the direct examination of the bladder itself, by carefully washing out the organ through a woven catheter by means of a hand-syringe, and then a few ounces of clear fluid may be introduced and the catheter withdrawn just far enough to prevent the fluid from escaping; after a few moments the catheter is reintroduced, and if the fluid returns mixed with blood the hemorrhage is probably vesical in origin.

The resorption-test, made by introducing a solution of potassium iodid into the bladder, and shortly afterward testing the saliva for free iodin, is also extremely valuable and satisfactory for the purpose of determining if the lesion exists within the bladder. When the bladder is the seat of a new-growth, its presence may be determined by bimanual palpation with one finger in the rectum or by examination with an ordinary searcher or sound. The value of an examination with the electrocystoscope, in cases of hematuria in which the diagnosis is difficult, can scarcely be overestimated. By its aid we are able not only to locate with exactness the portion of the bladder from which the hemorrhage emanates, but also to determine the cause and extent of the lesion.

In locating hemorrhage from the kidney the clinical symptoms, physical signs, and previous history of the patient are usually of great value, although hemorrhages occasionally occur from that source without the slightest warning and without other symptoms. As a rule, however, symptoms are present that point to the kidney as the seat of the difficulty. If the kidney is the seat of a malignant growth, an increase in its size can often be ascertained by bimanual palpation, while pressure over the affected region will usually produce a sensation of pain or sensitiveness if renal calculus is present. Lastly, if for any reason it has been impossible to locate the lesion, and at the same time the bladder appears to be its most probable seat, it is perfectly allowable to perform an exploratory suprapubic section, especially if the hemorrhage is severe or has been of long duration.

DR. W. F. GLENN, of Nashville, said that by means of the Leiter cystoscope and the Otis urethroscope we can often make out with certainty whether the bleeding comes from urethra, bladder, or kidney.

DR. BRYSON said that while he was inclined to agree with the last statement, we still need an instrument that will enable us to get a good view of the vesical outlet. He also called attention to the possibility of determining the source of pyuria of renal origin by means of the cystoscope.

DR. EDWARD R. PALMER, of Louisville, said he has had no trouble in getting a view of the neck of the bladder, for which purpose he employs a long Klotz tube (Nos. 24-26) and the Otis instrument lamp.

DR. ABNER POST, of Boston, stated that some doubts have arisen in his mind as to the accuracy of the resorption test. In one case coming under his observation, a dram of the tincture of opium injected into a man's bladder produced entirely different results on different occasions.

DR. R. W. TAYLOR asked Dr. Palmer whether he has not found that the introduction of large instruments into the posterior urethra is likely to give rise to epididymitis?

DR. PALMER replied that he has never seen any untoward results follow the introduction of the long Klotz tube.

DR. OTIS, in closing the discussion, said he agreed that in cystoscopy we are not able to get a good view of the internal urethral orifice. He regards the resorption-test as a very reliable one, and has in many instances proved its value.

DR. R. W. TAYLOR, of New York, read a paper on

GONORRHEA IN THE FEMALE.

He stated that gonorrhea in women, as in men, consists in an exudative inflammation of the submucous connective tissue, and the genital organs of women are so extensive, complex, and involuted, and so profusely supplied with bloodvessels, which frequently undergo normal engorgement, that it can readily be understood why the morbid process may show a tendency to become chronic and lurk and hide.

Dr. Taylor stated that there has been a tendency developed within the past ten years to refer, in a loose and unscientific manner, all female ailments to gonorrhea, and attribute to many husbands, who in earlier days had gonorrhea, a gonorrheal infection of their wives, which produces serious consequences. The extreme and exaggerated views of Noeggerath, who claimed that 800 out of every 1000 men living in large cities suffered from gonorrhea, which they never recovered from, and who, on marrying, sooner or later infected their wives, have done much to perpetuate these ideas. There is a tendency nowadays to harp upon the longevity of the gonococcus, its Phenix-like power of resuscitation, and its relentless virulence. This idea, put forth by syphilographers, has had undue weight upon many gynecologists, who, under its influence, are led to think that the gonococcus in the male and female never dies, and is ever ready to produce pelvic mischief. Dr. Taylor said he has seen many young women who have suffered from uterine and pelvic disease after marriage, whose trouble was induced by instrumental manipulation at the hands of energetic young men possessed of an ambition to be known as gynecologists. Minor surgery is certainly the cause of a great many cases of uterine and pelvic disease. In estimating the importance of gonorrheal infection as a cause of female trouble we must individualize rather than generalize.

DR. PALMER said it has been stated, and correctly so, that in cases of diseased tubes, of long standing and containing large quantities of stagnant pus, the latter very frequently fails to show the presence of gonococci; on making a section of the structure of the tube itself, however, the gonococci are often found in the stroma. In one case of mono-cryptorchidism coming under his observation the incarcerated testicle had to be removed because of gonorrheal infection, and the gonococci were found in its intimate structures.

DR. GLENN said he regards the statements made by some gynecologists that a man never gets well from a gonorrhea as nonsense.

DR. BRANSFORD LEWIS said that the experiments of Wertheim have clearly shown the penetrative power of the gonococci.

DR. JAMES R. HAYDEN, of New York, read a paper entitled

IODOFORM OINTMENT INJECTIONS IN THE TREATMENT OF SUPPURATIVE ADENITIS OF THE GROIN.

He described the method that he has employed in the treatment of buboes with satisfactory results. The operative field having been shaved and rendered surgically clean, a few drops of a 4 per cent. solution of cocain are injected beneath the skin where the puncture is to be made. The pus is then evacuated and thoroughly squeezed out through a small puncture. The abscess-cavity is then injected with pure hydrogen dioxid until the fluid returns practically clear. It is then washed out with a 1 : 5000 mercuric-chlorid solution and injected with a 10 per cent. iodoform-ointment. Then a cold mercuric-chlorid dressing is applied, with the idea of congealing the ointment. The patient should be kept quiet for forty-eight hours, although it is not necessary that he be confined to bed. The dressings are removed on the third or fourth day.

DR. W. K. OTIS said that he has had considerable experience with this method of treating buboes, and in many instances he regards it as the best. In most cases he has found that a single injection is not sufficient. Sometimes balsam of Peru is more effective.

Dr. Post said that by merely evacuating the buboes through an aspirator and applying a firm bandage we may occasionally effect a cure. We should remember that there is no single method that is applicable to all cases of buboes.

Dr. Taylor said that he employs the Scott Helm-Fontan method of treating buboes with almost uniformly good results. The fact should be borne in mind that with syphilitic adenopathies we sometimes get a slight periglandular infiltration that is likely to give rise to the sensation of fluctuation.

Dr. Lewis said if enucleation is performed sufficiently early, when the skin is not very much involved, we can sometimes get primary union. In one case he succeeded in getting primary union on both sides. He has employed the injection-method with varying success.

Dr. James Bell, of Montreal, said that in his experience the cases suitable for the injection-method of treatment are comparatively rare. Enucleation should not be considered a serious operation. The only objection to it is that it requires the use of an anesthetic and leaves a scar. The greater portion of the wound can usually be sutured.

Dr. Bransford Lewis, of St. Louis, read a paper entitled

THE INFILTRATION-METHOD OF LOCAL ANESTHESIA IN GENITO-URINARY SURGERY,

in which he described the Schleich method of producing local anesthesia by the use of intracutaneous injections of very dilute solutions of various drugs. The principle of the method consists in injecting intra-cutaneously certain solutions, and dissipating the sensibility of the peripheral nerves by the pressure of the infiltrated fluid, by the anemia that it causes, and by the comparatively low temperature at which it is injected; the effects are produced by the fluid itself, rather than by any particular drug that it may contain. As a matter of fact, the drugs used are of only incidental importance.

In his various surgical procedures, Dr. Schleich found the three following solutions, of graded strength, to answer all purposes:

Solution No. 1.

Cocainæ hydrochloratis	gr. iij.
Morphinæ hydrochloratis	gr. ⅓.
Sodii chloratis	gr. iij.
Aquæ destillatæ	ad f℥ iij.

M. Sterilisat. et adde sol. acidi carbolici (5 per cent.) gtt. 3.

The other two solutions are practically the same, the only difference being that in solution No. 2 the amount of cocain used is reduced to gr. 1½, while in solution No. 3 only gr. ⅛ of cocain is employed and gr. $\frac{1}{12}$ of morphin.

Dr. Bryson referred to a case in which he performed complete castration for prostatic overgrowth under cocain-anesthesia. Of late, in operating about the bladder, he has been inclined to use cocain in preference to general anesthesia. He has employed very dilute cocain-solutions, and the results obtained did not impress him very favorably. He would prefer to use cocain in cases in which it is possible to strangulate the parts by a ligature, and so make sure that too much of the drug will not enter the general circulation too rapidly.

Dr. Chismore said he has twice performed perineal section under the use of a very weak solution of cocain. In one of the cases the patient stated that he felt no pain whatever. In the other, the patient complained very much of pain when the deeper tissues were handled.

Dr. Lewis, in closing the discussion, said that by the method described we can operate on the deeper tissues and in regions that cannot be strangulated by a ligature. It has been employed in performing nephrectomy.

Dr. Eugene Fuller, of New York, made

REMARKS ON THE SEMINAL VESICLES.

These were largely in connection with the exhibition of a number of photographs of dissections, representing the normal and pathologic anatomy of the seminal vesicles. Dr. Fuller also reported a number of cases of seminal vesiculitis in which a cure of all the symptoms resulted from the employment of his method of stripping the vesicles.

Dr. W. N. Wishard, of Indianapolis, reported

THREE CASES OF EPITHELIOMA OF THE PENIS,

and exhibited a number of photographs illustrating the manner in which each was dealt with. In the first case the amputation was made close to the scrotum, and an opening was made into the urethra just behind the scrotum, which was utilized as a urethral canal. In the second case the corpora cavernosa and testes were removed entirely and the mucous membrane of the urethra was stitched to the margin of the skin. A small scrotal pouch was left for use as a flap in the event of any subsequent necessity for plastic work. The third case had been operated upon six months ago, an amputation being made very close to the scrotum. The operation was done under cocain, the patient refusing to take a general anesthetic, or to allow his testes to be removed. In all three of the cases the disease had advanced far back toward the scrotum at the time of operation, and in not one of them were the inguinal glands involved. In the first case recurrence took place at the point of amputation a year-and-one-half after the operation. In the second case, which was operated on over four years ago, and in the third case, which was operated on six months ago, there have been no signs of a recurrence.

Dr. Bryson referred to a case of epithelioma of the testes coming under his observation in which the abdominal glands became infected; the inguinal glands were not at all involved, although the scrotum had become infected some months previous to the patient's death.

Dr. R. W. Taylor said that in carcinoma of the penis infection of the inguinal ganglia usually occurs, and even if the glands do not appear to be enlarged they should be taken out, as it has often been shown that they are distinctly carcinomatous.

Dr. Chismore referred to a case of epithelioma of the penis in which he removed only about one-third of the glans penis in July, 1893. In a few months later the glands in the right groin became involved and were removed. In October, 1894, one of the glands in the left groin became involved and was removed; the wound never healed, and with the greatest rapidity there sprang from that incision a large growth which attained the size of a small cabbage. The patient died very recently.

DR. LEWIS said that the lines of infection in cases of carcinoma of the testes and of the penis are essentially different. In the former the direction of infection is in the iliac glands, while in carcinoma of the penis it is always in the groin. When the penis is removed for carcinomatous disease, he considered it desirable to remove the testes also, because if the latter are left, the stump of the penis, rubbing against the clothing, is likely to produce a certain amount of erethism, which increases the blood-supply to the parts and possibly acts as a factor in the recurrence of the disease.

DR. WISHARD, in closing the discussion, said that he is in favor of removing the testicles in these cases.

(To be concluded.)

AMERICAN NEUROLOGICAL ASSOCIATION.

Twenty-first Annual Meeting, Held at Boston, June 5, 6, and 7, 1895.

FIRST DAY—JUNE 5TH.

DR. PHILIP COOMBS KNAPPS, of Boston, delivered the

PRESIDENT'S ADDRESS.

He pointed out that the Association was organized twenty years ago, with a membership of thirty-five. At that time the idea of such a society was something of an experiment, as few similar societies existed in the world. The Association had, however, been successful, had increased until there were now eighty-five members, and the meetings had always been profitable and interesting. The society is not limited exclusively to specialists, as all who were interested in diseases of the nervous system had been welcomed to its ranks.

The scientific work done by members of the society was briefly reviewed, and it was shown that the chief work done in this country, with reference to diseases of the mind and nervous system, had been done by members of this Association. In regard to investigations in the anatomy and physiology of the nervous system, the work done in this country was still below that done abroad, and endowments for such researches are needed. The work done in the study of disease and its manifestations and in the treatment of nervous diseases has been much greater. American neurologists had done very much to advance our knowledge of the treatment of diseases of the nervous system, and no discovery in the last twenty years has been of as much importance as that of the rest-cure by one of the members of the society, Dr. Weir Mitchell, of Philadelphia.

Some of the needs for work in the future were then pointed out, among them being the need of a journal, under the control of the society, and greater recognition in our large hospitals, and a greater knowledge of nervous diseases by the physician in general practice. The greatest hope for the future in the treatment of nervous diseases lies in prevention. Many of the most serious affections are secondary to infectious diseases, and, therefore, with greater knowledge in the prevention and treatment of these diseases would come a diminution in the amount of nervous diseases due to them. It was considered advisable to put under a definite prescribed existence individuals who acquire nervous diseases by reason of a defective nervous organization. These individuals should also be protected from the mental contamination of neurotic and degenerate influences, whether in morals, religion, art, literature, or sociology.

There has been much claim of a vast increase in nervous diseases at the present time, but it does not seem probable that the conditions of life to-day are more exacting than those of life in the past, and with better food, more rational standards of living, and greater security for life and property, it seemed not improbable that there is an actual diminution in the amount of nervous disease.

DR. J. ARTHUR BOOTH, of New York, reported four cases of

HYSTERICAL AMBLYOPIA AND AMAUROSIS

successfully treated by hypnotism.

DR. F. X. DERCUM, of Philadelphia, thought it of interest to note that perception of light was normal in these cases. In his experience reversal of the color-field is not common, and does not occur so often as supposed.

DR. MORTON PRINCE, of Boston, asked if the patient's vision was noted during the hypnotic state. In his opinion the theory of a shutting-off of consciousness during hypnosis is a correct one. In many of these cases binocular vision is preserved, as proved by prism and stereoscope.

DR. G. L. WALTON, of Boston, said that experiments seem to show that the cases of this group really do see. The tests, however, do not prove that the patients are not simulating.

DR. BOOTH, in closing the discussion, replied that all of his cases were tested for binocular vision, but it was found absent. There was no cause for simulation.

DR. G. J. PRESTON, of Baltimore, read a paper on

COMPLETE HYSTERICAL ANESTHESIA IN THE MALE.

He related the case of a man, aged thirty-one years, a moderate drinker, who during a spree got into a fight, but received no injuries other than some slight bruises. A day or two after admission into the hospital he developed a small patch of anesthesia of the scalp. A few days later general anesthesia appeared. There was complete loss of tactile and pain-sense as well as temperature-sense. Muscular sense was greatly impaired, but not entirely lost. Taste and smell were lost and hearing impaired. There was great constriction of the visual fields and the color-fields were reversed. The reflexes, superficial and deep, were normal, as was the electric reaction. The patient gradually improved and finally recovered under hypnotic suggestion. Total anesthesia is a comparatively rare condition if the cases of transient loss of sensation be omitted. Stress was laid upon the importance and reliability of careful examination of the visual fields.

DR. GEORGE W. JACOBY, of New York, thought that cases of total hysterical anesthesia are not rare. They are most frequently found in cases of insanity, He referred to the case of a young girl, in whom he endeavored to determine the presence of ataxia, but it was not demonstrable. In the patients that he had observed there were also painful points on deep pressure.

DR. WALTON considered it unsafe to depend upon constancy of tests as establishing genuineness in cases of supposed hysteria. A clever simulant may pretend an anesthetic boundary with sufficient constancy to fall within the limits of genuine variation.

Dr. Wm. M. Leszynsky, of New York, said that with proper precaution during the examination, and with present methods of investigation faithfully and persistently carried out, it was impossible for the cleverest patient, even an accomplished opthhalmologist, to simulate successfully defective visual fields.

Dr. J. J. Putnam, of Boston, believed that persons in apparent health are hysterical to a certain degree. The diagnosis must be made from the general aspect of the case, and not from any single symptom.

Dr. W. A. Jones, of Minneapolis, asked if there was any immobility of the eyeball in Dr. Preston's case.

Dr. J. Madison Taylor, of Philadelphia, asked if there was any difficulty in locomotion, more particularly upon excitement.

Dr. Preston replied that there was neither immobility of the eyeball nor difficulty in locomotion. The muscular sense was preserved and there was no ataxia. He had observed total anesthesia in one case of insanity. He thought we were too likely to neglect a careful study of the central organism while devoting so much time to the periphery.

Dr. F. X. Dercum, of Philadelphia, read a paper on

RAILWAY SPINE,

and reported two cases with autopsy. In the first case there was excessive sprain of the muscles of the back and of the trunk generally, with marked spasm of the muscles and tremor, together with increased reflex excitability of the muscles and tendons. In addition, the symptoms so commonly observed in traumatic neurasthenia were typical, namely, disturbed sleep, startling dreams, sudden awakening with fright, excessive sweating, frequent micturition, occipital headache, tinnitus aurium, marked general weakness, etc. The patient died from some intercurrent disease. Careful examination of the nervous system showed no demonstrable lesion. In the second case there were severe traumatic left brachial neuritis and left brachial monoplegia, with atrophy of the muscles about the left shoulder; severe sprain of the muscles of the back; right hemianalgesia extending from the foot up to the level of the nipple; right hemithermo-anesthesia extending from the foot up to the level of the false ribs. The man was exceedingly weak physically, but mentally he seemed clear and accepted his situation in a philosophic spirit. He died suddenly from the rupture of an aortic aneurism. The post-mortem examination of the nervous system proved negative.

Dr. Joseph Collins, of New York, said that although the autopsy and subsequent histologic investigation did not succeed in unravelling the mystery of the real basis of the traumatic neuroses, the cases are instructive because of the negative findings. He was in the fullest accord with Dr. Dercum as to the futility of attempting to demonstrate the organic basis of these diseases by means of older methods of investigation, more particularly by any such as require hardening in Müller's fluid for their preparation. In the first place, this procedure allows no cellular stain except the carmine, and this is so inferior to the Nissl stain that there should be no reason for using it; and, in the second place, even if it were a good one, the changes that go on in the structures which it stains, from lying for several months in a watery fluid, are such as to negative any conclusions that might be drawn from possible findings.

In one of Dr. Dercum's cases the ponto-bulbar symptoms were so pronounced, the facial twitchings, the hemiatrophy, the sensory disturbance, that it was extremely likely that some anatomic change was at the bottom of it. It seemed to him, moreover, that the presence of the large aneurism, which in all probability was of traumatic origin, would indicate that the changes in these cases are primarily vascular.

Dr. Chas. K. Mills, of Philadelphia, looked upon these negative results as being very important. The microscopic examination should, however, have included the dorsal spinal ganglia.

Dr. Prince said that the paper contained a direct proof of the theory of the traumatic neuroses. The patients of this group suffered from both psychic and physical shock.

Dr. Edward D. Fisher, of New York, reported two similar cases still under observation. He believed there must be some pathologic changes to account for the symptoms in many of these cases.

Dr. Smith Baker, of Utica, expressed the opinion that at the time of the accident there is a psychic copy formed which perpetuates this as a series of mimicry. A fixation of attention results, and may bring about changes in the higher cortical centers.

Dr. L. C. Gray, of New York, thought that the nature of these cases is still very puzzling. The term hysteria is objectionable. These railway-cases are, however, not hysterical.

Dr. F. F. Miles, of Baltimore, predicted that in time we shall cease to consider some diseases as functional. The protoplasm of the neuron is altered in its activities by shock. Protoplasm has a tenacious memory (as we see when we have once taught it to make antitoxins) and may repeat an abnormal process until it is fixed by material change. The mystery is why this takes place in some cases of shock and not in others, and why this memory is perpetuated in the cell.

Dr. Dercum, in closing the discussion, fully realized the imperfeet method adopted in preparing the specimens, but this was due to unavoidable circumstances in connection with the autopsy, and not to lack of familiarity with the newer methods.

Dr. M. Allen Starr, of New York, then gave a lantern exhibition of

PHOTO-MICROGRAPHS OF NERVOUS HISTOLOGY; GOLGI STAINS.

This was followed by a lantern exhibition of the medulla oblongata of a chimpanzee with other specimens by Dr. Edward Wyllys Taylor, of Boston.

Dr. Thomas Dwight, of Boston, made an

EXHIBITION OF THE BRAIN OF A CHIMPANZEE.

He spoke of the brain of the chimpanzee "Jumbo," and discussed chiefly the anterior limb of the fissure of Sylvius. On the left this was distinct, ending in a bifurcation beneath a rudimentary *pars triangularis*. On the right it was represented by a minute depression not connected with the fissure.

DR. WM. TOWNSEND PORTER, of Boston, read a paper on

INHIBITION IN THE PHYSIOLOGY OF RESPIRATION.

He said that it is known that transverse division of the spinal cord between the bulb and the phrenic nuclei causes fatal arrest of the respiratory movements of the trunk. If death be prevented for a time by artificial respiration, the reflex powers of the cord gradually increase, and in the course of a few hours they may become so great that pinching the paws, blowing on the skin, suspending the artificial respiration, etc., may cause extended muscular contractions, including contraction of the respiratory muscles.

It is claimed that these contractions of the respiratory muscles after the separation of the cord from the bulb are proof that the respiratory impulse for muscles of the trunk is not derived from cells in the bulb, but originates in the spinal cord. Against this hypothesis of spinal respiration is urged the fatal arrest of respiration caused by separating the bulb from the cord. To this it is replied that section of the cord stimulates inhibitory fibers in the cord and thus suspends the action of the spinal respiratory cells.

The doctrine of prolonged inhibition of spinal respiration is easily overthrown by the following experiment: Hemisection of the cord usually arrests the contractions of the diaphragm on the side of the hemisection. This arrest is not an inhibition, for the diaphragm on the side of the hemisection begins at once to contract when the opposite phrenic nerve is cut. It follows that two hemisections, completely separating the cord from the bulb, do not inhibit the diaphragmatic respiration on their respective sides. The phrenic cells often send out no respiratory impulses after such a section, because they receive none from the bulb. The phrenic cells cannot themselves originate respiratory impulses. Hence the respiratory impulses do not arise in the spinal cord.

DR. THEODORE H. KELLOGG, of New York, read a paper on

THE PULSE OF INSANITY,

based on a study of 2172 cases, and gave tables and diagrams.

The general conclusions arrived at were: That there is, in established cases of insanity, considerable increase in the average frequency of the pulse, among both men and women. The average obtained from the 2172 cases was 84.8 per minute in the women and 80.8 in the men, giving a general average of 82.8 in the total number of patients studied. There was irregularity of heart-action in 5 per cent., intermittence in 2 per cent., heart-murmurs and heart-lesions in 8 per cent.

The general result of the sphygmographic studies was that abnormal tracings are to be found at some stage of the disease in the vast majority of cases of insanity. They are due to affections of the cortical and spinal motor and vasomotor centers, to various lesions of the sympathetic, to disorders of the pneumogastric, to peripheral and central vascular changes, to degenerations of central organs, to toxic agents in the blood, to autointoxications, to cachectic and diathetic conditions, to cardiac lesions, and to a great variety of intercurrent causes. No one sphygmogram is pathognomonic of any particular form of insanity, but there are certain general types of tracing that are found in one form of mental disease and not in another.

DR. CHARLES K. MILLS, of Philadelphia, read a paper upon

LOCALIZATION OF LESIONS IN THE PONS.

He reported the case of a man, fifty-three years old, with a syphilitic history, in which intracranial symptoms came on about eight months before death, the first being paralysis of the left abducens nerve. There had been attacks of weakness and dizziness. There were found paresis of the left leg and arm, paralysis of the left external rectus, paresis of the right external rectus, with some restriction of ocular movements to the left. The patient was extremely emotional, tending to break into laughing and crying without special incentive. No areas of anesthesia were discovered. The knee-jerk was exaggerated on the left side. Upon post-mortem examination a lesion of the pons and preoblongata was found, beginning about 15 mm. caudad to the junction of the pons and crus on the left side close to the median line, and almost entirely in the dorsal half of the pons. Sections through the lesion showed softened and degenerated tissue on both sides of the median line, much more marked on the left. On microscopic examination the parts involved in the lesion were found to be the right mesal fillet and pyramidal tracts to a slight degree, and the root-fibers of the abducens. For purposes of localizing small gross lesions in the pons, Dr. Mills divided each half of the pons and preoblongata into nine segments, three ventral, three dorsal, and three intermediate between the ventral and dorsal.

(To be concluded.)

CORRESPONDENCE.

LONDON LETTER.

Death of Sir George Buchanan and Mr. Arthur Durham—The Illness of Professor Huxley—The Antitoxin-treatment of Diphtheria—The Serum-therapy of Carcinoma—The Wilde Case—Some Recent Wills.

THE medical profession in this country has lost two distinguished members in the persons of Sir George Buchanan, late principal officer of the Local Government Board, and Mr. Arthur Durham, senior surgeon to Guy's Hospital. Buchanan spent the whole of his professional life in the public service, and his influence in the furtherance of sanitary reform can hardly be overestimated. He had the power—somewhat rare among scientific investigators—of making his reasoning intelligible and his conclusions clear to the non-scientific. His researches on the conditions of soil that foster tuberculosis and on the connection between the distribution of enteric fever and the pollution of the water-supply had a most powerful effect in awakening the public mind to the national importance of sanitary betterment. The bent of Buchanan's mind was essentially scientific, and though he was by no means lacking in administrative ability he did better work in a subordinate position than as chief of his department. He was impatient of the economic prudence and regard for expediency which made the statesmen with whom he had to work disinclined to sacrifice everything to what was flippantly called a "policy of sewers." He was also, it must be admitted, a little intolerant of difference of opinion on any scientific matter as to which he had made up his mind; and this sometimes led to unnecessary friction in administration. Personally, Buchanan was one of the best and most lovable of men; he had no official priggishness about him, either in his relations with the public or with his own subordinates, and he despised convention to the point of walking down Regent Street in the height of the London season with a pipe in his mouth. He died of malignant disease of the intestine, for which colotomy had been performed.

Mr. Arthur Durham's name is probably best known to the profession at large in connection with the tracheotomy-tube which he devised; he also did some sound experimental work on the physiology of sleep, and contributed articles on surgical subjects to Holmes' *System of Surgery* and Quain's *Dictionary of Medicine*. He was a good practical surgeon who never entirely succeeded in finding antiseptic salvation, and a man of genial, convivial temper, very popular with his professional brethren and much liked by all who knew him.

Professor Huxley, who completed his seventieth year on May 4th, has been ill very nigh unto death, but he is now surely, though somewhat slowly, recovering. He was attacked by influenza early in March, and for several weeks his condition was extremely serious; indeed, once or twice the situation was considered to be quite hopeless. His heart has long been a weak point, and the late Sir Andrew Clark seven or eight years ago gave a gloomy prognosis based on the condition of that organ. One or two visits to Maloja, with a course of graduated hill-climbing on Oertel's system, however did the Professor so much good that he left London and settled at Eastbourne, a fashionable health-resort on the Sussex coast, where he lives in a pretty house (designed by one of his sons-in-law, who is an architect) on the slope of the South Downs, which end in the tall white cliffs of Beachy Head. Here he found not only air, which acts on many invalids like champagne, but opportunities of carrying out the hill-climbing treatment under the best possible conditions. At Eastbourne Huxley got what seemed to be a fresh lease of life; he walked with the step of a man in the fulness of his strength, and the amount and quality of his literary work gave the clearest evidence of renewed health. Just before he fell ill the first part of his critical examination of Mr. Balfour's *Foundations of Belief* appeared in the *Nineteenth Century;* the attack was so acute that he was unable to correct the proofs. It is impossible to say when the second part will be written, but it is certain that it will be some time before Huxley is again able to wield the pen. Throughout his illness Huxley's cheerful fortitude was the admiration of those about him. He never complained and never showed the slightest perturbation of spirit. He was keenly interested in his own symptoms, and brought his vast physiologic knowledge to the discussion of them with his medical attendants as calmly as if he had no personal interest in them; in the matter of treatment, however, he was a model of obedience, never arguing or suggesting, but leaving himself entirely in the hands of those who had charge of him. He said to one of his doctors: "When I was at sea (he was a surgeon in the Royal Navy for several years) I have sometimes been awakened in the night by the tossing of the ship in a storm. When I heard the voice of the officer of the watch overhead I turned over and went to sleep again with the thought that it was his affair, not mine." In the same spirit, when during his illness the ship of life seemed on the point of being wrecked, he would say to the physicians: "Do whatever you think right, it is your affair, not mine." He said that throughout his life he had held fast to two principles: First, always to obey orders; and, secondly, never to tell a lie, big or little. A thing which greatly alarmed his doctors was the extent to which he lost flesh; so emaciated did he become that he laughingly said he could demonstrate the processes and markings of the femur, tibia, and fibula on his own "shrunk shank." The varying phases of his illness have been followed by his fellow-countrymen with a sympathetic interest, which is in remarkable contrast to the abuse, hatred, and all uncharitableness with which he was pursued twenty or thirty years ago.

There is a distinct lull here in the excitement about the antitoxin-treatment of diphtheria. This is not due to any disenchantment, such as followed the discovery that the vaunted *currus triumphalis* of tuberculin was only a "one-hoss shay" of rickety constitution, it is simply the settling down of a turbid enthusiasm to the pure translucency of sober judgment. The general feeling in this country is the same as that expressed by the resolution which was the outcome of the great debate on the subject at the German Congress of International Medicine recently held at Munich. This was, broadly, to the effect that the method, though distinctly hopeful, must still be considered as being on trial. Meanwhile evidence is being accumulated, sifted, and weighed. A Committee of the Clinical Society of London is conducting an inquiry on the subject, and will report in due course. Clinical experiments on a large scale are being carried out in the hospitals of the Metropolitan Asylums Board, which are set apart for infectious diseases, and the results are being digested by Dr. Sims Woodhead, the head of the laboratory of the Royal Colleges of Physicians and Surgeons, who in the fulness of time will embody them in an exhaustive report. The Board declines to allow any information whatever to leak out, even as to the general drift of the evidence so far collected; it is hardly to be wondered at, therefore, that there is a growing feeling that the figures are not coming out altogether favorably for the antitoxin. The profession is waiting somewhat anxiously for this report, and the situation at present may be described, in a phrase of Lord Salisbury's, as one not of suspended animation, but of "animated expectancy" on the subject.

Almost simultaneously fresh victories for serum-therapy —this time in the treatment of carcinoma—have been claimed by Emmerich and Scholl in Germany, and by Richet and Héricourt in France. The former used the serum of animals which had been inoculated with erysipelas, and the results as reported appeared to be very satisfactory. The hopes excited by Emmerich's paper have, however, been somewhat dashed by the announcement that Professor Angerer, of Munich, in whose wards the experiments were made, denies that the erysipelatous serum had any effect on the cases of carcinoma in which it was tried. At a meeting of the Munich Medical Society on May 15th, at which Emmerich, although he had received due notice, failed to put in an appearance, Angerer gave details as to all the cases that had been treated with serum and showed that the alleged specific effect was what mathematicians call a vanishing quantity. In one case not only had the disease said to be "definitely cured" recurred, but the patient had actually died a month before Emmerich and Scholl published their paper. The matter can hardly end here. It is impossible to believe that a man of the scientific standing of Professor Emmerich could have intended to mislead his professional brethren, and, on the other hand, it is almost equally difficult to believe that he himself could have been so grievously misled in a matter admitting of such easy verification. An exactly similar conflict of testimony took place at Vienna three or four years ago when Adamkiewicz reported some marvellous results from the treatment of malignant disease with a "cancerin" or "cancroidin" of his own concoction, and Albert, in whose clinic the remedy was used, at once challenged his statements, and asserted that the treatment had done no good. There is no reason to doubt the honesty of Adamkiewicz, who has since given his results to the world in a book, which bears the marks of good faith. He and Emmerich are, like Koch, simply living proofs that even the celestial minds of seekers after scientific truth are subject to the psychologic law that the wish is often father to the thought. Richet and Héricourt used serum from the blood of an ass and two dogs, into which liquid squeezed out from an osteo-sarcoma of the leg had been injected. Two cases—one of fibro-sarcoma and one of carcimona of the stomach—have been treated with this serum with what is claimed to be a successful result. In neither case, however, does there appear to be sufficient evidence, even on the authors' own showing, that a radical cure has been effected.

The trial of Oscar Wilde has had a special interest for medical men, not only on account of the striking confirmation which it afforded of Max Nordau's views as to the unwholesome tendencies of "degenerate" literature and art, but because the convict who is now expiating his offence at the treadmill is the son of a distinguished member of the profession. Sir William Wilde, who happily did not live to see his honored name disgraced by an unworthy son, was ophthalmic surgeon to the Queen in Ireland, and also one of the best otologists of his day; in the latter department his name is perpetuated by "Wilde's Snare." He was a man of versatile ability and varied knowledge, and won a considerable reputation in more than one province of intellectual activity outside his own profession, notably in archeology. Oscar himself was simply an insufferable coxcomb, who very likely saw in unnatural vice a means of adding to the notoriety which was as the breath of his nostrils. There can be no doubt he had a corrupting influence among sickly minded *graciles pueri* at Oxford, who, in their worship of what they took to be "art," tried to make up for an imperfect knowledge of Greek literature by aping Greek vices. In spite of the howls of indignant virtue in the English press the trial revealed nothing new to those who have seen things as they really are in London and in our great public schools and universities. The fact that the police, with the clearest evidence to go upon, have on several occasions allowed notorious criminals of the same kind to elude the clutches of the law, lends color to the belief that, although Oscar Wilde's doings have been perfectly well known to them for years, no action would have been taken had not the culprit himself, apparently from his very love of self-advertisement, forced the hands of the Public Prosecutor. Having avenged itself on one conspicuous malefactor British morality will now comfortably go to sleep again for some years.

The wills of a few prominent physicians and surgeons who have recently passed away may serve to give some idea of the financial condition of the medical profession in this country. Sir William Savory, an ex-president of the Royal College of Surgeons of England and consulting surgeon to St. Bartholomew's Hospital, left personal estate to the amount of £93,190 ($465,950). His practice was a good one, but his name was not a household word like that of Lister, Paget, Spencer Wells, or Henry Thompson. Mr. Arthur Durham, whose death is referred to in an earlier part of this letter, has left personal estate valued at £76,338 ($381,690). He was a popular man, in large practice, but with a fine liberality in money-matters that makes it somewhat surprising that he managed to save as much as he did. Mr. J. W. Hulke, who died while holding the office of president of the College of Surgeons, left personalty to the amount of £8018 ($40,090). He was a first-rate surgeon, and a man of great scientific reputation; his professional skill was, however, to a large extent neutralized, as far as success in practice was concerned, by a manner which was the reverse of conciliatory, and which made him unpopular with many of his brethren. Dr. Hack Tuke, one of the leaders in psychologic medicine, left personal estate amounting to £29,459 ($147,295). By far the largest fortune left by any physician since Sir Andrew Clark was that of Dr. Francis Bisset Hawkins, who died last December within a few weeks of the completion of a century of life. His personal estate was valued at £133,403 ($667,015), and there was considerable real estate besides. The greater part of Dr. Hawkins's wealth, however, was inherited, for he was at no time a busy physician, and he retired from practice at about the age of forty. The quarter of a million left by Clark, and the still larger amount left by Gull, were only partly made by the practice of medicine. Both these successful physicians numbered among their patients mighty men of finance, who acted as their pilots amid the treacherous shoals and currents of the money-market. The average British doctor, whether in town or country, as a rule, leaves little beyond the amount of his life-insurance and the "good-will," whatever that may be worth, of his practice. The average net income of physicians throughout the country probably does not exceed £500 ($2500).

THE TREATMENT OF OPIUM-NARCOSIS WITH A STRONG DECOCTION OF COFFEE GIVEN HYPODERMICALLY.

To the Editor of The Medical News,

Sir: As the question of the treatment of opium-narcosis has frequently been before the readers of The Medical News, and, as potassium permanganate is running the gauntlet of medical opinion as an antidote to the Jupiter of drugs, is perhaps in order at this time, I would like to record a case treated by me several years ago.

On April 3, 1891, I was called at 11 o'clock P.M. to see an infant five months old. When I reached the house, which was only a mile from my office, the following circumstances connected with the case were ascertained: During the absence of the mother a little girl, ten years old, gave the baby one teaspoonful of laudanum to hush its crying. The girl had often seen the mother give paregoric, hence the mistake. I was told that the infant vomited about ten minutes after taking the drug. The clothes were stained by the vomited matter. The odor of the drug was present. Just how much of the narcotic was retained is a matter of speculation. Six hours had elapsed after the poison had been given before I was called. Upon examination I found the infant suffering from opium-poisoning of the profoundest type. Respiration had almost ceased, occurring only once or twice to the minute. The heart was rapid, irregular, and weak, and a cold, clammy perspiration covered the entire body. The pupils were almost imperceptible. I was determined to make a desperate effort to save the life of this comely and healthy infant, and concluded to remain on the field as long as life lasted. Emetics were not given, owing to the child's inability to swallow. Siphoning out the contents of the stomach was not resorted to as I did not have any kind of tubing with me. Even if these measures had been practicable I doubted their utility, as the time for such treatment had passed. As internal medication was impossible I resorted to the hypodermic method to combat the poison. I requested the mother to make a strong decoction of coffee, equal parts of ground coffee and boiling water, which is about as strong as it can ordinarily be made. Of this fluid I injected about twenty minims every ten or fifteen minutes. After three or four injections had been given it was quite evident that two foes had met upon the circulatory field. The child would start in its abnormal sleep as if haunted by some hideous monster. From this time on the respirations were more frequent. The heart's action became slower and stronger. In fact, the three feet of the great vital tripod were aroused from their lethargy by a powerful and direct stimulant.

After working with my little patient for about six hours he was brought within the safety-line. Artificial respiration and titillation with the ends of the fingers over the ribs, to induce the respiratory act, were kept up throughout the entire time of treatment This case, taken in its entirety, must place coffee, when given in strong decoction subcutaneously, as an antagonist to opium of the highest order. Yours truly,

C. D. Simmons.

Dutch Town, La.

THE TREATMENT OF HYDROPHOBIA IN 1806.

To the Editor of The Medical News,

Sir: I have copied from an old manuscript (1807) the following, which, if true, shows that legislators were just as crooked in 1806 as they are now:

"CURE FOR THE BITE OF A MAD DOG.

"The following is an account and prescription of the remedy and cure for the hydrophobia, or canine madness, made by John M. Crous, in conformity to an act of the Legislature of the State of New York at their present session (1806), viz.:

"1st. Take one ounce of the jaw-bone of a dog, burned and pulverized, or powdered to fine dust.

"2d. Take the false tongue of a newly foaled colt; let that be also dried and pulverized . . . and . . .

"3d. Take one scruple of the verdigris which is raised on the surface of old copper by laying in moist earth; the coppers of George I or II are the purest and best. Mix these ingredients together, and if the patient be an adult or full grown, take one common teaspoonful a day, and so in proportion for a child, according to its age. In one hour after take the filings of the one-half of a copper of the above kind, if to be had; if not, then a small increased quantity of any baser metal of the kind—this to be in a small quantity of water.

"The next morning, fasting (or before eating), repeat the same as before. This, if complied with after the biting of the dog, and before symptoms of madness, will effectually prevent any appearance of the disorder; but if, after the symptoms shall appear, a physician must immediately be applied to, to administer the following, viz.: Three drams of the verdigris of the kind before mentioned, mixt with half an ounce of calomel, to be taken at once. This quantity the physician need not fear to administer, as the reaction of the venom then diffused throughout the whole system of the patient neutralizes considerably the powerful quality of the medicine, and . . . Secondly, if in four hours thereafter the patient is not completely relieved administer four grains of pure opium or one-hundred-and-twenty drops of liquid laudanum.

"N. B.—The patient must be careful to avoid the use of mik for several days after taking any of the foregoing medicines. John M. Crous."

Paid by the Legislature.

If true, the standard of intelligence was of no higher order than that shown by the Congress of the United States a few years ago, when it appropriated $10,000 to experiment upon the shaking of rain out of the dry sky by the explosion of dynamite sent up in balloons for the purpose. The experimenters got the money and the Government the experience. J. W. Moore.

Easton, Pa.

EVACUATION OF THE TYMPANUM.

To the Editor of The Medical News,

Sir: I thank Dr. B. Alex. Randall for calling my attention to Toynbee's experiments, showing that exhaustion of the tympanic cavity and the Eustachian tubes took place in the act of deglutition with the nose and mouth closed. My reading and discussions with medical men (some of them aurists) had failed to bring this to my notice. The first mention of such an experiment was in The Medical News (No. 1166, p. 567), where Dr. Randall states that he can secure as good exhaustion of the tympanic cavity by this means as by the real reversal of the Valsalva plan (and my method is in effect simply this): I maintain that the facts are against him, as may be proved by making a few trials. The effect of the Toynbee plan is too feeble to be of any practical use, and especially is this the case when congestion and inflammation of these structures exist. It was in this condition that I found my plan so valuable—by creating a vacuum blood-pressure is lessened, tension diminished, and pain relieved—in fact, a threatened abscess prevented. I did not say that in the stage of exudation the evacuation of products would be greatly promoted. Nobody can deny that it will assist a little. The tympanic cavity contains at any time only a small quantity, so that one drop of fluid got rid of plays an important *rôle.* I simply gave my own experience, and, as I got relief from pain and avoided the dangers and sufferings of probably a second mastoid abscess, I can surely be forgiven if I have shown a little enthusiasm. My plan of treatment came to me by accident, suggested at the time by my sufferings. I was seeking relief from pain which I experienced. I had and have no desire to ignore anybody or violate any physiologic facts. I published the article to have the treatment tested by others, and will be governed by the result of experience. Furthermore, as I got so much good from it I was anxious to contribute to the relief of others who might be suffering in the same way. I have tested it in a good number of cases and always with good results, and have not once seen any bad effect following it. It is my intention to publish my cases as soon as convenient, and let this plan of treatment speak for itself. I have no fear of a few insinuating and very sarcastic (as well as uncalled-for) remarks having any other effect than to commend more generally this plan of treatment to the profession. It will then be time enough to make comparisons and draw conclusions.

Very truly yours,
DONALD B. FRASER.

STRATFORD, ONTARIO.

TEST FOR INDICANURIA.

To the Editor of THE MEDICAL NEWS,

SIR: The following test for indican in urine, a modification of Jaffe's test, may be of interest and new to some of your readers, as I have not seen it in any book on urinary analysis.

Take equal quantities of urine and hydrochloric acid, add a few drops of hydrogen dioxid, and then the chloroform, as in Jaffe's test. The advantages of H_2O_2 over sodium hypochlorite are that the reaction takes place more rapidly, the color is more distinct, and therefore better for approximate comparative quantitative analysis; the reaction also seems to oxidize the indican more completely, and therefore, for quantitative analysis of evaporation of chloroform and weighing the indigo, more reliable; and, lastly, the hydrogen dioxid introduces into the urine no substance likely to interfere with the test in the presence of albumins. Yours truly,

H. V. RICHARDSON.

BALTIMORE, MD.

NEWS ITEMS.

The Second International Congress of Gynecology and Obstetrics will be held at Geneva, Switzerland, during the first week of September, 1896. The following subjects will receive consideration: The relative frequency and the forms of contracted pelvis most commonly observed in different countries; The treatment of eclampsia; The operative treatment of posterior displacements of the uterus; Pelvic suppuration and its treatment; Modes of suture of the abdominal walls—the best methods of avoiding abscess, eventration, hernia, etc.

The French Association of Surgery will hold its ninth Congress at Paris on October 21, 1895. Two subjects will receive consideration: I. The surgery of the lung (excluding the pleura). II. Early or late operative intervention for solutions of continuity in bone.

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Dr. T. Mitchell Prudden, of New York City, will deliver the Annual Address in Medicine at the commencement exercises of Yale University on June 25th. His subject will be: "New Outlooks in the Science and Art of Medicine."

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The State Board of Medical Examiners of New Jersey will hold a special meeting for examination of candidates July 23d and 24th. Applications must be completed ten days prior to the examination.

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Correction.—The word "fluorescin" in the Progress-note on p. 615 of THE NEWS of June 15, 1895, 9 lines from the end, should have been "fluorescein."

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Trendelenburg has been made Professor of Surgery and Director of the Surgical Clinic at Leipsic, in succession to the late Prof. Thiersch.

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Verneuil, the distinguished French surgeon, died at Paris on June 12th, at the age of sixty-two years.

BOOKS AND PAMPHLETS RECEIVED.

Castration for Hypertrophied Prostate. By B. Merrill Ricketts, M.D. Reprinted from the Times and Register, 1894.

The Treatment of Gonorrhea by Irrigation of the Urethra. By H. M. Christian, M.D. Reprinted from the Therapeutic Gazette, 1894.

The Shaw Gas-tester for Detecting the Presence and Percentage of Fire-damp and Choke-damp in Coal Mines, etc. By Joseph R. Wilson. Excerpt from the Transactions of the Federated Institution of Mining Engineers. London and Newcastle-upon-Tyne: Andrew Reid & Co., Limited, 1894.

Painless Childbirth, or Status of the Means to Prevent Birth-pain. By William B. Dewees, A.M., M.D. Reprinted from the International Medical Magazine, 1894.

The Third Annual Report of The Sheppard Asylum. A Hospital for Mental Diseases. Baltimore, Md., 1895.

Notes on the Newer Remedies. Their Therapeutic Applications and Modes of Administration. By David Cerna, M.D., Ph.D. Second edition, enlarged and revised. Philadelphia: W. B. Saunders, 1895.

Syllabus of Gynecology, based on the American Text-book of Gynecology. By J. W. Long, M.D. Philadelphia: W. B. Saunders, 1895.

Laboratory Guide for the Bacteriologist. By Langdon Frothingham, M.D.V. Illustrated. Philadelphia: W. B. Saunders, 1895.

Blood-serum Therapy and Antitoxin. By George E. Kreiger. M.D. With illustrations. Chicago: E. H. Colegrove & Co, 1895.

The Theory and Practice of Medicine. By Frederick T. Roberts, M.D., B.Sc., F.R.C.P. Ninth edition. Philadelphia: P. Blakiston, Son & Co., 1894.

On the Relation of Urea to Epilepsy. By J. Nelson Teeter, M.D. Reprinted from the American Journal of Insanity, 1895.

The Dynamics of Life. An Address delivered before the Medical Society of Manchester, October 3, 1894. By W. R. Gowers, M.D., F.R.S. Philadelphia: P. Blakiston, Son & Co., 1894.

School-children's Eyes. A Plea for the Examination of Every Child's Eyes when Commencing to Attend School. By W. F. Southard, M.D. Reprinted from the Journal of the American Medical Association, 1894.

THE MEDICAL NEWS.

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ORIGINAL ARTICLE.

THE USE OF VACCINE-SERUM IN THE TREATMENT OF VARIOLA.[1]

BY LLEWELLYN ELIOT, A.M., M.D.,
OF WASHINGTON, D. C.

DURING the past few months it has been my good fortune to employ vaccine-serum in the treatment of variola, and, believing the Section of State Medicine of the American Medical Association to be the proper place for the discussion of new methods in the prevention of disease, I desire to present an epitome of the results obtained. The possibilities of serum-therapy in the management of diphtheria appear to have been fairly well established; still a few unfortunate instances occur which tend at times to shake our firm belief in its efficacy. The place of serum-therapy in syphilis, in tuberculosis, in tetanus, and in variola has not yet been fully established, and of these the last to become established will be that of variola serum-therapy; this is because cases do not occur in the practice of all physicians, and then, again, the great majority of physicians would decline to employ a means of treatment as yet in a purely experimental stage, and one that would bring them into such close contact with those patients. The bacilli of diphtheria, of tuberculosis, of tetanus, and of cholera, having been isolated and cultivated, bacteriologists have been enabled to proceed on very proper lines; in variola, however, this is not the case, as the *specific* germ of the disease has not yet been discovered.

Dr. George M. Sternberg, Surgeon-General of the United States Army, in a paper read before the Association of American Physicians at its meeting in Washington, D. C., on May 24, 1892, entitled "Practical Results of Bacteriological Researches,"[2] presented the results of his experiments, which very clearly indicated that the blood-serum of an immune calf contains something that neutralizes the specific virulence of vaccine-virus, either bovine or human lymph, and expressed his intention to follow up this line of investigation and to test the question of its possible specific action in neutralizing the smallpox-virus in infected individuals, either before or after the development of the disease.

From the advance-sheets of a forthcoming publication[1] of General Sternberg I make the following extract: "Later I made a number of experiments upon unvaccinated children in two orphan-asylums in Brooklyn, with a view to ascertain whether blood-serum from an immune calf or from an individual who had recently suffered an attack of smallpox, if injected into the subcutaneous tissues at the time of vaccination, would prevent the development of a characteristic vaccine-vesicle. In these experiments from 1 to 5 c.cm. of the serum supposed to contain an antitoxin of smallpox were injected near the point of vaccination, or, in some instances, into the other arm. The result was negative, even when serum was used from an individual who was just convalescent from a severe attack of smallpox. But it may be that a different result would have been obtained if a larger quantity of blood-serum had been used, or if it had been injected into the circulation instead of into the subcutaneous tissues."

Kramer and Boyce[2] and Landmann[3] have conducted experiments that show that the development of the vaccine-vesicle is not prevented by the use of small quantities of the blood serum of an immune calf. Landmann[4] also shows that blood-serum from an individual who had suffered from a recent attack of smallpox exerted no noticeable influence upon the development of a case of confluent smallpox in a child five years of age when using a 25 c.cm. dose of the serum.

Sternberg[5] further thinks the blood-serum could be injected into the circulation of a smallpox patient through the median vein, and apprehends no danger from the introduction of a considerable quantity in this way.

Auché[6] has in two cases employed blood-serum obtained from a patient who had recently recovered from variola; the quantities used were 6 and 9 c.cm. In one case the effect of the introduction of the serum was attended with a good result, but in the other case no appreciable benefit was produced.

At the request of Dr. J. J. Kinyoun, U.S.M.H.S., during my recent connection with the Smallpox

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[1] Read before the Section of State Medicine of the American Medical Association at Baltimore, Md., May 7-10, 1895.

[2] American Journal of the Medical Sciences, July, 1892, vol. civ, page 1.

[1] Immunity, Protective Inoculations in Infectious Diseases, and Serum-therapy.

[2] British Medical Journal, 1893. London. (Sternberg.)

[3] Zeitschr. für Hygiene, 1884, Bd. xviii, p. 318. (Sternberg.)

[4] Ibid.

[5] Op. cit.

[6] Arch. Clin. de Bordeaux, 1893, vol. ii, p. 317—Auché: "Essai de Sérothérapie dans la Variole."

Hospital of this city, I employed a quantity of vaccine-serum in the treatment of five cases of smallpox. In four cases recovery followed; in one case the disease was of such a malignant type that little hope of recovery could be entertained from any course of treatment. Dr. Kinyoun had been waiting for an opportunity to test the effects of such a line of treatment, and accordingly prepared the serum for me. His method of preparing this serum was as follows:[1] "Accordingly, on December 23, 1894, I took a liter of blood from a heifer calf which had been previously vaccinated on November 26th. At the time of bleeding the local effects of the vaccination had disappeared; the animal to all appearances was sound and well. As soon as the blood was withdrawn it was taken to the laboratory, where on the next day about 350 c.cm. of tolerably clear serum were drawn off. A part of the serum was transferred to a small sterilized flask, while another of equal quantity was passed through a special filter in order to remove the blood-corpuscles and any chance bacteria present. About 35 minims of pure vaccine-lymph (two days old) were added to 2 c.cm. of the filtered and unfiltered serum, respectively. After a few hours' exposure the serum was sent out to the vaccine-farm and a small heifer was inoculated in the usual manner with each sample. The results were negative in both instances, demonstrating that the process of filtration does not affect its power."

Three separate supplies of the serum were furnished me, each one at my suggestion having an increased strength; that is to say, the first supply was obtained from a calf four weeks after its recovery, the second three weeks after recovery, the third two weeks after recovery. The amount to be injected, as suggested by Dr. Kinyoun, was 15 c.cm., to be repeated in about six hours should no reaction occur; this amount I increased as circumstances appeared to indicate until 30 c.cm. were given at a single dose.

The syringe used in the injection of the serum was made by Collin, of Paris, and is four inches long in the barrel and has a capacity of 20 c.cm.; there is a piece of rubber tubing four inches long adjusted to the nozzle of the syringe, into which fits the needle, an ordinary hypodermic needle, one-and-a-quarter inches long. The intervention of the piece of tubing allows more freedom of movement to the operator and prevents the possibility of the breakage of the needle by a chance movement of the patient. This piston is graduated as in the hypodermic syringe usually employed.

Preparation of the patient. There is no special preparation of the patient necessary to the employment of the vaccine-serum. It is sufficient that the surface chosen be rendered as clean as possible. This is done by first washing the surface with soap and warm water, then with alcohol, and finally with a solution of mercuric chlorid of a strength of 1 to 3000 or thereabouts.

The point selected for the insertion of the serum does not matter materially. The usual sites have been under the right mamma, in the buttocks, and on the front of the thighs. The needle must not be driven deeply into the muscles, but into the subcutaneous tissues. I have always thrown the serum in slowly and gently stroked the surface, so that none shall be lost.

Observations at the time of injection. At the time of injection and even before its completion the surrounding tissues become edematous, hard, and pitted upon the top, as in a vaccination cicatrix; this edema covers a space from one-and-a-half to three inches in diameter; the edges are hard and the whole edematous surface becomes icy cold; this condition wears away in a few hours, leaving a small amount of soreness about the point of injection. There is no actual pain attending the injection, but patients occasionally appear faint and complain of some difficulty of breathing; these inconveniences are no doubt the result of nervousness on the part of the patient. Abscess at the point of injection has never formed in my cases.

The quantity of serum used in the cases to which I have applied this treatment has varied from 15 c.cm. to 30 c.cm. at each treatment, and from 60 c.cm. to 165 c.cm. during the entire course of the case.

The time to employ the serum is, I think, before the papules become vesicles or pustules—in other words, before the disease has time to assert itself strongly. As a prophylactic measure it could be used instead of the customary vaccination when persons have been directly exposed to the smallpox-infection. Whether I am correct or not in this last matter remains for future observers to determine. I do not think in cases in which the disease has reached the pustular stage the employment of vaccine-serum will have any modifying effects.

Stability of the preparation. Judging from an ocular examination, I think vaccine-serum is a stable preparation, as some I have kept since the last days of December (1894) does not show any change, further than a slight precipitation, the precipitated matter disappearing when the flask is agitated.

Effects of the treatment. Under this treatment the pulse increases in volume and in number of pulsations; the quantity of albumin in the urine decreases; there is a rise of temperature followed by a fall; the papules abort and the pustules desiccate, and there is very little pitting. While employing the serum other treatment is given. In five cases in which the vaccine-serum was used one patient was in a septic state when the treatment was commenced and died of malignant variola; the other four were cured of variola; one, however, after being cured of confluent variola and discharged from the hospital, was readmitted with what I supposed to be a genuine case of cowpox, a septic infection or an unfortunate sequela of the serum. She did not have a second attack of variola vera.

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[1] Abstr. San. Repts., M. H. S., Wash., D. C., 1895, vol. x, p. 31. Kinyoun: "Preliminary Report on the Treatment of Variola by its Antitoxin."

Case I.—W. G., male, colored, aged twenty-eight years, a laborer, was admitted to the Smallpox Hospital December 21, 1894, ill with *variola maligna.* He had been successfully vaccinated four years ago. His condition on admission was very unfavorable, the eruption was confluent, accompanied with a high temperature and violent delirium. The temperature from December 21st to 28th varied from 103.6° to 99°. During this time the temperature steadily declined, whereas the pulse and respiration remained high, the delirium continuing about the same. This was so violent at times that restraint became necessary. On December 25th considerable hemorrhage occurred in the pustules, and there was much gastric irritation. On December 28th, at 10 a.m., the patient's condition was as follows: Temperature 99°, pulse-rate 120, respirations 32 and quite superficial. The patient was conscious at times, but very weak. A small quantity of urine was passed, and it was found to contain albumin 10 per cent. per volume.

At this time 15 c.cm. of the serum were injected subcutaneously after the skin had been carefully disinfected. At 11 a.m. the respiration became deeper, the pulse stronger and fuller, the temperature 99.6° The man was very thirsty. The edema caused by the injection had entirely disappeared. At 2.30 p.m. another dose of 15 c.cm. was given, his condition being about the same, the temperature 100°, the pulse 130, the respirations 32. The respiration was deeper, the pulse stronger, and there was considerable expectoration. At 9 p.m. another dose of 15 c.cm. was given. At the time of the injection the skin over the face had become very dry, hard, and bleached, the skin in its texture resembling very much the appearance of elephant-hide. The temperature was now 99°, the pulse 120, respirations 28 and shallow; expectoration was free, and tinged with blood.

On the morning of the 29th another dose of 15 c. cm. of serum was given, the temperature being 98°, the pulse-rate 120, the respirations 32. No urine had been passed during the preceding twelve hours. The man was plainly growing weaker, and he died on the morning of the 31st. No post-mortem examination was held. The total quantity of serum injected was 60 c.cm., the number of injections four. No effect was produced upon the eruption or upon the disease. The peculiar feeling of the skin in this patient is frequently noticed in malignant cases.

Case II.—B. L., a male, colored, aged twenty years, a driver, was admitted to the Smallpox Hospital on January 4, 1895, with the diagnosis of variola. He had been successfully vaccinated some time before. An eruption lasting about five days extended over the face, chest, arms, body, and legs. Upon his admission his axillary temperature was 99.8°, the pulse-rate 98, respirations 24. He had considerable bronchitis. At 11 a.m., January 5th, after thorough disinfection of the part, 15 c.cm. of the serum were subcutaneously injected at a point about 1½ inches below the nipple. As the serum was injected quite a large wheal, two inches square, appeared, very tightly stretching the skin, and having at its middle numerous pits, appearing like a vaccination-cicatrix, and covering a space of about one inch square. As the wheal was masséed the pits disappeared. During the process of injection the patient became very much frightened, but experienced little if any pain. The urine on examination showed 8 per cent. of albumin per volume. One hour after the injection the temperature registered 100.8°, the pulse 88, strong, the respirations 24 and deeper. At 5 p.m. of the same day 15 c.cm. of the serum were injected. Temperature was then 102,° the pulse-rate 90, full and strong, the respiration deep and full, the man expectorating freely. At 6 p.m. the temperature was 100.8°, the pulse-rate 96, the respirations 30. On January 6th the temperature was 102.2°, the pulse 92, full and strong, respirations 24 and of good depth. The patient complained of soreness at the point of injection.

Quite a notable change occurred in the pustules, which appeared to be losing their moist character, having an inspissated appearance, and quite a number of very small new pustules appeared in the healthy skin. At 8 p.m. the man was in a profuse perspiration, the temperature was 99.4°, the pulse 88, and respirations 28; the urine showed a marked decrease in the quantity of albumin. Thirty c.cm. of the serum were again administered. About one-half an hour after this injection the patient complained of a difficulty in breathing, but this passed off in the course of an hour. At 9 p.m. another dose of 30 c.cm. was given. This produced no ill effects. The temperature was 102°, the pulse-rate 100, the respirations 26. Albumin was present, but in smaller quantity. On the following day there was a marked change in the eruption. All the former pustules were now drying, and the smaller ones that had appeared the previous day seemed to have aborted. The general condition of the patient was more favorable. No further serum-treatment was given, and the man was convalescent on January 16th. During a period of forty-eight hours 105 c.cm. of the serum were given in five injections.

On January 16th the scabs were becoming detached from the skin, and presented a very favorable appearance. There were no indications that there would be any pitting, whereas two other cases, not receiving the serum, to all appearances identical with this one, will be badly marked.

Case III.—B. S., a male, colored, aged nineteen years, a waiter, who had never been vaccinated, was admitted to the Smallpox Hospital with the diagnosis of variola. On January 25, 1895, at 8 p.m., he had an eruption on the face, chest, and scalp; he also suffered from pharyngitis, and had a temperature of 103°. On the 26th, at 10.30 a.m., his temperature was 100.5°, the pulse-rate 88, the respiration 28; 23 c.cm. of serum (second supply) were injected into the right side of chest. The usual wheal of edematous tissue followed. At 3 p.m. the temperature was 102.4°. At 7 p.m. the temperature was 102.6°, the pulse-rate 96, the respirations 24. Injections of 22 c.cm. were made. On the 27th the morning temperature was 100°, the pulse 98, the respirations 26. No further serum treatment was given, as the papules were aborting. On February 2d the man was convalescent. The number of injections was 2, and the quantity of serum used was 45 c.cm.

CASE IV.—F. H., a male, colored, aged nineteen years, a laborer, was admitted to the Smallpox Hospital on the night of January 18, 1895, with the diagnosis of variola. He had been vaccinated successfully some years ago. As this man was in a very filthy condition he was given a hot (bichlorid) bath upon his admission, when the points of eruption showed themselves very prominently and profusely, giving indications of a severe attack of the disease. The temperature was 99.8°, the pulse 88 and strong, the respirations 24.

On January 19th, at 11 A.M., his temperature was 100.2°, the pulse 84, the respirations 22. There were papules on his face, the urine was amber in color, its reaction neutral, its specific gravity 1012, and there was no reaction of albumin to heat and nitric acid. An injection of 15 c.cm. of the serum was made into the right buttock, followed by the usual appearances, but in addition the edematous surface became very cold. There was no pain. At 11.30 A.M. his temperature was 99.8°, his pulse 84, and the respirations 24 and fuller. At 2 P.M. the temperature was 100.2°, the pulse 100, the respirations 30. We now injected 30 c.cm. of serum into the left buttock, with the same results as before. At 3 P.M. the temperature was 100°, the pulse 96, the respirations 28. At 8 P.M. the temperature was 101.8°, the pulse 108, the respirations 28. We again injected 30 c.cm. under the right nipple. This caused some burning and uneasiness, and again appeared the edema and coldness as before noted. There was no change in the eruption. At 10 P.M. the temperature was 101.8°, the pulse 112, the respirations 30. There was no albumin in the urine. On January 20th, at 11 A.M., the temperature was 100.2°, the pulse 102, the respirations 24. We again injected 30 c.cm. into the left buttock. The point of the insertion of the needle in the chest-wall was still sore, but that of the buttock was not noticeable. At 3 P.M. the temperature was 101.8°, the pulse 114, the respirations 34. The man complained of considerable chest-oppression. At 7 P.M. the temperature was 101.8°, the pulse 110, the respirations 24, and he had no further oppression. On January 21st, at 10.30 A.M., the temperature was 99.4°, the pulse 88, the respirations 28. The eruption had become dry, and only three new spots had appeared, one small one on the right side of the neck and two small ones on the left side. We now injected 30 c.cm. into the front of the thigh. At 3 P.M. the temperature was 99.8°, the pulse 96, the respirations 30. On January 22d the temperature was 99.8°, the pulse 100, the respirations 26. No further serum-treatment was given.

On January 23d the temperature was 99°, the pulse-rate 88, the respirations 26. A few points of eruption existed on the neck and body of the size of a pin-head. The other points of eruption had dried. The man was allowed the liberty of the ward, and was given calcium sulphid gr. ij every three hours. He was discharged from the hospital February 5th. The number of injections had been five, the quantity of serum used 165 c.cm.

CASE V.—B. R., female, colored, aged sixteen years, a domestic, was admitted to the Smallpox Hospital on January 29, 1895, with the diagnosis of *variola vera*. She had been vaccinated unsuccessfully. The temperature on admission was 101.8°, the pulse 120, the respirations 34.

On January 30th, at 10 A.M., the temperature was 99.6°, the pulse 94, the respirations 36. Eruptions existed on the face, neck, chest, and feet. She had pharyngitis and bronchitis, with free expectoration, and she was menstruating. Under the right breast 30 c.cm. of the third supply of serum were injected. (This serum was from the blood drawn the second week after the recovery of the calf.) The tissues surrounding the point of injection became hard, swollen, and cold (3 in. × 2½ in.), and were elevated about one-half an inch, with the pits before described. There was no pain. At 1 P.M. the temperature was 100.6°, the pulse 88, the respirations 24 to 30 in the half-minute, very superficial, with very little chest-movement. The point of injection was still sore. At 5 P.M. the temperature was 103.6°, the pulse-rate 112, the respirations 36 and of better character. There was still soreness at the point of the injection. At 7 P.M. the temperature was 103.2°, the pulse 102, the respirations 32. I injected 22 c.cm. into the right buttock, with the same results as in the former injection. A few papules became umbilicated.

On January 31st, 10.30 A.M., the temperature was 100.4°, the pulse 74, the respirations 22. Several pustules had filled, and were umbilicating, others had dried. I injected 15 c.cm. of serum into the left buttock, followed by the same swelling and hardness. The point of injection in right buttock was not sore, but that under the breast was sore. At 1.30 P.M. the temperature was 99°, the pulse 80, the respirations 28. At 5 P.M. the axillary temperature was 98°, the tongue temperature 99°, the pulse 72, the respirations 28. At 10 P.M the temperature was 99.2°, the pulse-rate 70, the respirations 26. There were no new points of eruption.

On February 1st the temperature was 99°, the pulse 86, the respirations 28. Two small pustules had appeared on the face. The woman was given the liberty of the ward February 5th, no further serum-treatment being instituted. The number of injections was three, and the quantity of serum used 67 c.cm.

This patient was discharged on February 22d, entirely well, but was readmitted on February 27th from the Freedmen's Hospital, with what I think was either variola vaccinæ, an unfortunate effect of the vaccine-serum, or a septic infection. Her disease went through a course of fever and eruption, followed by a number of abscesses. While I have never seen a well-marked case of cow-pox, some cases having as many as 400 pustules, I am more than positive it was either a case of cow-pox or an eruption attending a large dosage of strong serum.

CONCLUSIONS.

From my limited experience with vaccine-serum I conclude:

1st. Vaccine-serum modifies variola.

2d. Vaccine-serum has a marked influence upon the eruption of the disease, in that the papules or vesicles abort and the pustules desiccate.

3d. Vaccine-serum prevents pitting.

4th. Vaccine-serum should be accorded a place in the therapeutics of variola.

Whether or not my experience will be confirmed by that of others I cannot say; it remains for future investigators, working upon the same lines, either to prove or disprove my conclusions.

ORIGINAL ADDRESS.

THE PHYSIOLOGIC AND THERAPEUTIC ACTION OF IRON, WITH A DISCUSSION OF ITS NEWER PHARMACEUTIC COMPOUNDS.[1]

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A KNOWLEDGE of the physiologic compounds of iron and of the food-stuffs is necessary to any clear conception of the therapeutic use of iron. Bunge some ten years ago (*Zeitschrift für Physiol. Chemie*, 1885) found an iron-holding organic compound in the egg-yolk, in milk, etc., which was very stable. At the body-temperature it yielded only after a couple of hours the iron-reaction to ammonium sulphid. This compound he named hematogen, from the belief that it is the antecedent of hemoglobin. Zelewski (*Zeitschrift für Physiol. Chemie*, 1887) obtained from the liver a similarly stable iron-holding compound which he named "hepatin." This contained less iron than hematogen—the former 0.011 per cent.. while the latter held 0.29 per cent.

Bunge, in the paper describing his observations, advanced a novel theory of the beneficial action of iron in anemia. Recognizing at once that as the animal economy received in the food stable organic iron-compounds there existed no call in the animal organism for synthetic processes. His investigations tended to disprove that iron was of any further use than as a protective agent to hematogen by uniting with reagents like H_2S that would attack the iron in the latter, and thus permit it to escape.

Further studies soon showed that hematogen belongs to the nuclein class of proteids. Macallum ("On the Demonstration of the Presence of Iron in Chromatin by Microchemical Methods," *Proceedings of the Royal Society*, vols. l and lvii; "Studies on the Blood of Amphibia," *Transactions of Canadian Institute*, vol. xi; and "On the Absorption of Iron in the Animal Body," *Journal of Physiology*, vol. xvi, Nos. 3 and 4, 1894) by the use of microchemic technique showed that iron is a constant constituent of the chromatin (nuclein of chemists) of all vegetable and animal cells.

The statement that hemoglobin arises from a breaking down of the chromatin of the nucleus of the hematoblasts is supported by a mass of weighty evidence. Researches at the present time go to show that nuclein forms an endless series of compounds with albumin, and that it itself is as varied as the organ or tissue from which it is obtained. The amount of iron seems to vary with the nuclein, and it is possible that it is absent in some, as claimed by Halliburton (Croonian Lectures, 1893).

There is no evidence that the animal body can elaborate nucleins; these are always the finished product of plant-life. It must be clearly understood that the chemic composition of these nucleins as found by different investigators differs so much that some chemists are inclined to deny a chemic individuality to the substance, and that the isolated substances do not represent the living chromatin any more than does serum-albumin represent living protoplasm. Physiologic and pathologic research shows that free hemoglobin and its disintegration-products are undoubtedly never elaborated into nuclein or chromatin again, and hemoglobin free in the blood or administered as food cannot be of further use as an "oxygen-carrier." The most careful researches on hemoglobin indicate that it is invariably destroyed by the liver, and its iron separated as a free inorganic compound. By the administration of large doses of inorganic iron-compounds the liver, the intestinal mucosa, and even the renal parenchyma are found to be loaded with inorganic iron. In the case of some animals, if the dose is large enough, a fatal result takes place by coma, suggesting that free iron is the causation possibly of the coma often seen terminating pernicious anemia. By the use of large doses of hemoglobin a condition of the liver, the intestinal mucosa, and the kidneys can be induced similar to that which follows large doses of inorganic iron—even the iron-coma.

Iron is undoubtedly absorbed, and its good results when administered hypodermically and by the rectum, as well as the beneficial effects following the use of iron sulphid, give a complete answer to Bunge's contention that the therapeutic action of iron is purely that of a protector to nuclein.

Conceding as we must that iron-salts, and even organic compounds other than chromatin, are not elaborated into "oxygen-carriers," some tonic, stimulative, alterative, or protective action must be ascribed to this drug. Does it increase absorption and assimilation of chromatin or stimulate the conversion of the chromatin of the hematoblasts into hemoglobin, or both? We would be in a position to answer could we offer a clear explanation of the action of arsenic as a blood-former—no doubt the two drugs bear a strong analogy in their therapeutic action. The unpleasant gastro-intestinal effects from the use of iron, not infrequently noticed in clinical work, probably arise from hepatic disturbance set up by the free iron in the liver-parenchyma. The combination of minute doses of mercury with the iron appears to make the latter tolerated, although when taken alone it is very offensive.

The broad indications for the use of iron may be not only those of primary and secondary anemia, but conditions of asthenia following or accompanying such diseases as pneumonia, septic infection, erysipelas, diphtheria, etc. It is not intended, however, to point out here the special diseases in which iron is indicated. Proceeding at once to the promised criticism of the newer pharmaceutic preparations, our attention can profitably be confined to the following principal ones: "Albuminate of iron," "peptonate of iron," "hemogloblin" (including hemoferrum), "ferratin," and "bone-marrow."

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[1] The address in therapeutics at the Ontario Medical Association, held June 5 and 6, 1895.

Iron albuminate is an artificial preparation of iron in weak chemic union with albumin. "Ammoniacal solutions of artificial albuminate of iron change their color almost instantly on the addition of sulphid of ammonium" (Bunge, *Physiological Chemistry*, translated by Wooldridge, p. 102). Iron albuminate cannot be converted into nuclein any more than iron oxid, and therefore can have no more therapeutic value than the latter. Inasmuch as nuclein cannot be converted into an ordinary peptone by any amount of digestion, "peptonate of iron" possesses no more value than "albuminate of iron," and, what is worse, the drug usually sold under this name appears to be nothing more than iron citrate dissolved in a peptonic mixture. The addition of ammonium sulphid to the "peptonate of iron" will instantly throw out the iron as an inky precipitate.

Hemoglobin is found in the market as "dried oxblood," "hemoferrum," etc. The entire weight of evidence goes to show that this compound after absorption is doomed to destruction by the liver, its iron being separated out as an inorganic compound ultimately. Except in the way of furnishing an increase of the pigments of the organism (viz., bile, urine, etc.), the therapeutic action of hemoglobin is similar to that of any iron-salt.

Ferratin was made originally from pigs' livers.[1] This is not a nuclein-compound. The ferratin in our market is made from the union of albumin and iron in an alkaline solution.[2] The claim put forth that this latter drug is almost identical with Bunge's hemoglobin is, to say the least, most extraordinary. Ferratin contains 7 per cent. of iron and no phosphorus; in hematogen the iron amounts to 0.29 per cent. and phosphorus is present. An ammoniacal solution of ferratin changes color instantly on addition of ammonium sulphid, indicating that it is a simple albuminate of iron (Bunge, *Physiological Chemistry*, translated by Wooldridge, p. 102). The addition of ammonium sulphid to the dry powder gives the iron-reaction also instantly. The fact that a compound containing 7 per cent. of iron is a very improbable antecedent of hemoglobin, which contains less than 0.5 per cent., would suggest itself at once. It has already been pointed out that hemoglobin has a definite antecedent, a nuclein-compound containing a certain amount of iron. Much of the nuclein of the animal body is in union with albumin in the compounds known as nucleo-albumins. The amount of iron in these varies with the organ or tissue from which they are obtained.

Until the peculiar nuclein that acts as the antecedent to hemoglobin can clearly be determined it is useless to administer any nuclein simply because it is a nuclein, and it is more rational to depend upon "bone-marrow." The nucleins of bone-marrow may in all probability be the pharmaceutic preparation of the future. By extracting the fat and by digestion of the albuminous elements, the bone-marrow nucleins could be obtained almost pure. Prepared in this way their administration in a concentrated form would be possible, and a disappearance of the weak and offensive-looking preparations now in the market would soon occur.

In this connection I may mention that Gourlay (*Journal of Physiology*, vol. xvi, p. 23) has concluded that the active physiologic remedy in the thyroids is a nucleoalbumin.

It is very possible that the nuclein alone of the colloid substances will yet prove itself the active ingredient in the thyroid preparations.

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[1] Finely minced pigs' livers are treated with water, and the mass raised gradually to the boiling-point, and kept at that temperature for a few minutes. The filtered fluid when cool gives on the addition of acetic acid a flocculent precipitate which quickly settles and can be easily washed on the filter. It contains on the average 6 per cent. of iron. This is the original ferratin. F. Vay: "Ueber den Ferratin und Essingchal dies Leber," Zeitschr. für Physiol. Chemie, vol. xx, p. 377.

[2] One mixes 100 grams of albumin in 2000 c cm. of cold water, with a solution of 25 grams of ferric tartrate in 250 c.cm., and neutralizes with soda—viz., 38 grams of caustic soda diluted to 10 per cent. The brownish-yellow fluid is warmed for from two to four hours at 90° C., when it becomes clear. It is allowed to cool, and then it is acidified with tartaric acid and rendered alkaline with ammonia. After twenty-four hours' treating at 90° C. it is cooled and the ferratin precipitated with tartaric acid. The precipitate is washed on the filter and dried between paper.

In order to purify it, it is again dissolved in 1400 parts of water with 20 parts of ammonia (25 per cent. solution) and 20 parts of 10 per cent. solution of ammonium tartrate. It is then warmed for twenty-fours at 90° C. and then the ferratin precipitated, washed, and dried as before. From De Filippi, "Experimental Untersuchungen über das Ferratin von Marferi, Schmiedeberg," Ziegler's Beiträge zur Pathologischen Anatomie, vol. xvi, p. 462.

CLINICAL MEMORANDA.

GUNSHOT-WOUND OF THE HEART.[1]

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SURGICAL literature is not meager in details relating to wounds of the heart, and although much has been written, and many interesting cases have been placed upon record in the various journals, as well as in the standard surgical publications, the subject is one of especial interest, and every case presenting itself is worthy of note. No apology therefore appears necessary for offering to the Association the clinical history of a case that came under my observation in September, 1894, and which has been carefully examined and watched through its entire course. I am indebted to Dr. C. H. Mastin, Jr., for accurate notes of the case, from a few hours after the reception of the wound, through convalescence up to the date of discharge from observation.

I shall not weary the Association with an extended dissertation upon wounds of the heart, nor consume the time of its Fellows by skimming over a sea of statistics or ballooning amid clouds of doubt and speculation to establish the correctness of my diagnosis in this case, but will simply lay before you "a plain unvarnished statement," and leave you to form your conclusions.

The main points to be established in making clear a diagnosis of such a wound are, first, accurate visceral localization, and, secondly, the symptoms that follow the reception of the injury. We all know that—except in those rare cases of transposition of the heart from its normal position in the left thorax to the right side of the chest—the heart occupies a space on the left side of the thorax, bounded by the upper border of the left third rib, and that a line drawn across the sternum from the upper portion of the left auricle, *when filled*, will pass into the second left intercostal space; that the left boundary-line of the heart is a curved line beginning on the third rib, three inches from the median line of the sternum, curving outward and going downward until the fourth rib is reached, at which point it is just four inches from the median line of the sternum; the line now begins to curve in until it reaches the fifth intercostal space, where, near the apex of the heart, it is just three-and-one-half inches from the midsternal line. The whole extent of the right ventricle is presented to the surface on the left side, with only the thin edges of the lungs intervening.

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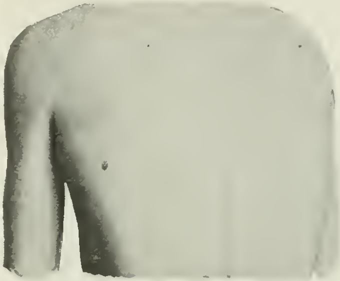
[1] Read by title before the American Surgical Association, May, 1895.

When a person is in the erect posture the heart sinks to a level somewhat below the sternal cartilage of the seventh rib, and rests upon the diaphragm, to which it is bound by the fibrous pericardium, and, although it rises and sinks according to the motions of that muscle in each act of respiration, it is prevented from swaying much to either side, whatever be the position of the body—a provision of Nature to prevent any impediment to pulmonary expansion. Such being the true anatomic position of the heart, there is no difficulty whatever in tracing upon the surface of the chest an accurate cardiac localization. Hence, if there be two points selected, one anterior and the other posterior, and the two points be within the area of localization indicating the position of the heart, then if a line drawn from these two given points pass through the assumed location of the heart, it becomes almost positive that it must pass through the heart itself.

If then, in addition to the anatomic points at which a ball enters and makes its exit from the chest, we mark the course or direction which that missile has taken, the symptoms usual in such wounds go far toward strengthening the postulate and warrant the diagnosis. But since symptoms of heart-wounds, when taken alone, are often so obscure, they are of very little diagnostic value, and it is necessary to investigate every point bearing upon the case. The usual symptoms are such as indicate severe shock, whether from simple nervous depression or from loss of blood, which is often exceedingly profuse. The patient is faint, anxious, and deadly pale; the pulse small, irregular, and very rapid; the surface cold and clammy, the pupils dilated, the voice feeble and indistinct, and respiration is labored and interrupted by sighs. The pain is severe all over the region of the heart and the sternum. Auscultation gives the sound usually heard in an aneurismal varix, and, even though the exhaustion consequent upon the wound is very great, cases are not infrequent in which the patient has been able to run or walk quite a distance before falling and expiring. Still, these combined symptoms are not wholly pathognomonic of heart-wounds, because they may be due to chest-wounds or injuries of large vessels, with much loss of blood. Yet when the direction of a wound is clearly in the location of the heart, and we find that it has penetrated the pleura, either from before or in the rear, we are justified in concluding that the heart has been injured, provided the train of symptoms just detailed follow the injury; and especially is this a diagnostic point if the wound has penetrated the chest-wall of *the left side, between the fourth and fifth ribs, and about two inches from the sternum.*

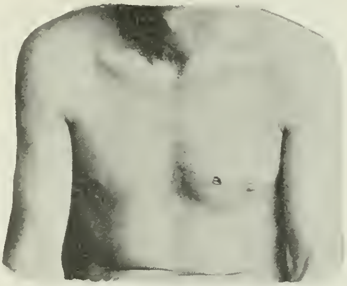
The clinical notes of the case, which I now offer to the Association, and the photographic pictures which I attach to the same, showing a front and rear view of the patient, I think fully authorize me in entitling this report a Gunshot-wound of the Heart.

Fig. 1.



Posterior view, showing wound of entrance.

Fig. 2.



Anterior view, showing wound of exit.

W. Y., white, aged thirty-two years, of good physique, born in Mobile County, Ala., a farmer by occupation, and residing sixteen miles from the city of Mobile, was shot on the morning of September 24, 1894, from an ambush, the weapon used being a 38-caliber Winchester rifle, and the distance, as afterward measured, 110 yards. The one who did the shooting was an expert marksman, and placed the ball in the rear of the chest, on the left side just below and to the outer side of the angle of the scapula, at which point it entered the chest between the seventh and eighth ribs, passing through the entire chest and emerging from the intercostal space between the fourth and fifth ribs, 2¼ inches from the left nipple. The exact measurement of this man shows that the distance from the midsternal line, in a transverse direction, to the center of the left nipple is 4¾ inches. A line drawn from the wound of entrance to that of exit passes directly through the right ventricle, and upon this anatomic location it is not possible for the heart to have escaped direct penetration.

Upon the reception of the wound the man did not fall, but walked about twenty steps, and then, feeling very weak and profuse hemorrhage coming from the *front wound*, he sat down. His wagon was then brought up and he was taken to his house, a distance of about a fourth of a mile. He coughed only once or twice and spat up a little froth tinged with blood, but there was no hemorrhage from his mouth or the wound of entrance. Pain was intense all over the anterior portion of the chest, and collapse was complete. The shooting occurred about eleven o'clock in the forenoon, and soon thereafter the man was placed in a spring wagon and brought to the city, a distance of sixteen miles, over a very rough road; owing to an accident on the way he did not reach the city until about seven o'clock in the evening, at which time I saw him, and found his condition as follows: There was little or no reaction; the clothes were saturated with blood; shock was complete, with an almost imperceptible pulse of 136 beats to the minute. The man was still suffering great pain, but it was not so violent as it had been; the skin was blanched and covered with a cold perspiration; the voice was almost inaudible, sighing, and restless. He was covered up and mustard-plasters, with artificial heat, were applied. Morphin, $\frac{1}{4}$ grain, with atropin, $\frac{1}{150}$ grain, were given by hypodermic injection, together with whisky. The pain was severe during the night, but slight reaction took place toward morning.

On September 25th there was less pain, a slight cough, a pulse of 116, and a temperature of 99°. Morphin was repeated and hot milk given as nourishment. In the evening the pulse was 116, the temperature 100°; there was less pain, but more cough. Morphin was ordered as before. On September 26th the morning pulse was 92 and the temperature 101°. The man had slept about two hours during the night, suffered less pain and had less cough. His bowels were moved by Rochelle salts; the morphin was discontinued, and he was put upon an exclusive milk-diet. In the evening his temperature was 100.5°, the pulse 114, and his general condition about as in the morning. I ordered codein phosphate, $\frac{1}{4}$ grain, to be repeated during the night if he was restless. On September 27th the morning temperature was 99.8° and the pulse 96; the man had passed a fairly good night, but cough had increased, with expectoration of traces of blood and pus; his respiration was 28 per minute. There was no increase of pain, but there was much tenderness over the region of heart. Auscultation had given no positive signs, as the heart-sounds were so muffled that it was not possible to gain any positive assurance from them. His diet was milk and broths; his bowels acted naturally, and he enjoyed quiet rest. In the evening the temperature was 101°, the pulse 92, the respirations 32; there was some cough, but less pus, and only a streak of blood, with little or no pain. On September 28th the morning temperature was 100°, the pulse 96, respirations 21; the man had slept most of the night, had less pain and less cough, with little or no blood or pus in the sputum. His diet was milk, broth, eggs, toast. In the evening the temperature was 100.5°, the pulse 92, and respirations 32; cough was less and there was very little pain. The man was doing well. On September 29th the temperature was 99.8°, the pulse 96, and respirations 21. There was a slight discharge from the posterior wound, consisting of bloody serum, with a very little pus. The anterior wound has closed by blood-crust. The entire condition was favorable, with little or no pain or cough. In the evening the temperature was 100.5°, the pulse 104, the respirations 24; there was an increase of cough, with a little blood, but the general condition was as good as it had been. On September 30th the morning temperature was 99.8°, the pulse 96, the respirations 24. There was some cough, with traces of blood; the man had slept well and had no pain save in coughing. In the evening the temperature was 100.4°, the pulse 96, the respirations 24; and the condition was about the same as in the forenoon. October 1st the temperature was 99.5°, the pulse 100, the respirations 28, and the general condition was better. On October 2d the morning temperature was 99.5°, the pulse 88, the respirations 33. There had been some increase of cough, and a little pus in the sputum; but there was no pain, and the man had rested quietly. On October 3d the evening temperature was 100°, the pulse 96, the respirations 32, with very little cough. On October 4th the morning temperature was 99.3°, the pulse 92, the respirations 28, with less cough. On October 5th the evening temperature was 99.5°, the pulse 92, and the respirations 21. On October 6th the evening temperature was 99°, the pulse 92, the respirations 24, and there was no cough and no pain. On October 7th the noon temperature was 99°, the pulse 92, respirations 26; there was some cough, with clear blood in the sputum, but no pain. On October 8th the temperature was 99°, the pulse 90, the respirations 24. There was less cough, with no blood. On October 9th the temperature was 99.4°, the pulse 80, respirations 20, and no cough. The wounds had closed, the man was sitting up, and his general condition was so good that no further notes were taken, as improvement was steady and unaltered to October 15th, when he was discharged from all observation, and at that time the accompanying photographs were taken.

Such is the outline of a case that has proved of great interest to me. I have not the shadow of a doubt in my own mind that the right ventricle was traversed by the ball; that the *profuse* hemorrhage of the wound of exit came from the heart itself—the intercostal artery not being injured—because at this point only a very thin edge of lung intervenes between the right ventricle and the chest-wall, and since there was little or no hemorrhage from the wound of entrance, it shows that the lung was not giving out any great amount of blood; and, again, he had little or no hemorrhage from the mouth in coughing.

As will be seen from the clinical notes, there was absolutely little or no treatment; the case was simply watched and the indications were met as they arose. The man recovered solely through his own inherent vitality.

PATHOLOGIC DISLOCATION OF THE FIRST CERVICAL VERTEBRA FOLLOWING CARIES.

BY JOHN A. LICHTY, M.D.,
OF CLIFTON SPRINGS, N. Y.

MR. W., aged twenty-seven years, of Cincinnati, appeared at the office of Dr. C. C. Thayer, Superintendent of the Medical Staff of the Clifton Springs Sanitarium, in November, 1894, giving a history of severe trauma, received at the age of three years, when he fell down a flight of stone steps, striking upon his head, but not producing any scalp-wound or fracture of the skull. Immediately after the fall he had a convulsion, and after he had recovered from the immediate effects he was subject to severe headaches. At the age of twelve he had an epileptiform convulsion. Other convulsions followed and they increased in frequency and severity; sometimes he had several in one day and had to be continually kept under the influence of bromids. He was taken to various prominent physicians in Cincinnati, Philadelphia, and New York, and at the age of nineteen the convulsions ceased. Then he began to have neuralgic pain in his neck; this gradually became stiff and he evinced great pain upon moving his head. He always walked very erect and carefully.

In May, 1894, he made a misstep while walking and experienced severe pain in his neck. The neuralgia in the back of the neck increased and the muscles of the neck became rigid. He had no localizing symptoms referable to the cord, but had some loss of co-ordination. When he came to Dr. Thayer last November he complained of severe pain in the back of the neck and head, inability to sit up or to turn his head, except with the aid of his hands, stiffness of the jaw and subsequent inability to masticate food properly, and difficult and painful deglutition.

Examination showed a man of average height, the muscles not well developed, the muscles of the neck rigid, but no deformity of the cervical spine could be detected. The pupils were equal and dilated. The tongue and throat could not be examined on account of the rigidity and inability to open the mouth sufficiently. The heart and lungs were normal. Myotatic irritability was universally increased. There was no paralysis and no impairment of sensation. Caries of some of the cervical vertebræ was thought of, but could not be fully proved, and an external cervical pachymeningitis was diagnosticated. The disease progressed steadily. There was no variation from the normal temperature. Toward the end both pupils were contracted. Four days before death the man walked about his room; but on the following day he said he felt weak and as if paralyzed all over. He could move his arms and legs with great difficulty; he could not swallow, and lay in bed helpless. Later the paralysis increased, and soon there was complete motor paralysis of both arms and legs, and the control of the sphincters was lost. The knee-jerks were much increased. Breathing was laborious and on the morning of April 22d he died, apparently from failure of respiration, because the heart continued to beat for ten minutes after respiration ceased. Dr. Thayer kindly furnished me the foregoing account and requested me to make an autopsy and report the case.

Permission was obtained to examine only the brain. The body was fairly well nourished; the muscles of the arms and legs were not well developed and the deltoid muscles were especially atrophied; the muscles of the neck were very well developed and the sterno-cleido-mastoid stood out prominently.

No scars were found on the scalp and the calvarium was free from any signs of old fracture. The dura was thickened throughout and hard and resistant upon cutting, and at various points the meninges were closely adherent to the brain-substance. At the base of the brain and anterior to the pons there was an extensive external purulent meningitis. In both fissures of Sylvius the meninges were closely adherent thoroughout. The brain-substance was normal in every respect. The lateral ventricles were filled with a cloudy fluid. Upon examining the base of the skull the odontoid process was seen projecting through the foramen magnum. Flaky pus welled up from the spinal canal. The transverse ligament was entirely absent and the odontoid process pinned the cord back against the posterior edge of the foramen magnum. The first cervical vertebra seemed almost entirely destroyed by the carious process, and what was remaining had been displaced forward. The cord was flattened out, having only about one-half its normal antero-posterior diameter. The membranes of the cord were intact. The pus, which had every appearance of being tuberculous, was stained with Ziehl's carbol-fuchsin and examined under an oil-immersion lens, but no tubercle-bacilli could be found. The pathologic diagnosis was cervical Pott's disease involving the first and second vertebræ, with a purulent external pachymeningitis.

From the history of the case I would infer that the carious process in the bones began soon after the patient fell, at the age of three, and that last May, when the sudden jar was experienced upon making a misstep, the external pachymeningitis became purulent, and that the last vestige of the transverse ligament disappeared four days before death, when the paralysis began to appear. The epileptiform convulsions were probably due to the same accident. Gowers (*Diseases of the Nervous System*, vol. i, p. 241) mentions epilepsy as a rare sequel of injury to the vertebra.

A case similar to the preceding occurred during my service as resident physician at the Philadelphia Hospital, and was reported at the Philadelphia Pathological Society by my colleague, Dr. J. Dutton Steele. A left-sided hemiplegia occurred very suddenly, while the patient was retiring for the night. He became unconscious and died in two or three minutes. The autopsy revealed a ruptured transverse ligament and a carious odontoid process, which was thrown against the left side of the cord, thus producing the left-sided hemiplegia and sudden death.

From the limited literature that I have been able to find on pathologic or secondary dislocation of cervical vertebræ, I infer that it is not of common occurrence. The usual text-books do not mention it or refer to it only very briefly. Shaw in Holmes' *System of Surgery* (vol. iii, p. 322) speaks very particularly of diseases of the atlas and axis, and reports one case in which there was a pathologic dislocation diagnosticated, but no autopsy is reported to verify the diagnosis. The mechanism of dislocation given and the subsequent symptoms seem to be confirmed by the cases mentioned in this report.

THE OPIUM-HABIT.

Sudden and Complete Withdrawal without Other Medication as a Method of Treatment.

BY M. V. BALL, M.D.,
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PHYSICIAN TO THE PENITENTIARY OF THE EASTERN DISTRICT OF PENNSYLVANIA

IN treating the opium-habit medical men are at variance, some advising the gradual reduction of the drug, others believing sudden and complete stoppage best.

Serious symptoms often follow both methods, and these are treated with proper remedies.

In the past month three opium-habitués were received at the Eastern Penitentiary, having been convicted of crime. Case I, aged twenty-six years, had been smoking opium for four years, having acquired the habit through association. Case II, aged thirty-six years, had been taking twelve grains of morphin daily for the past twelve years, having first acquired the habit after an illness, during which the drug had been used. Case III, aged thirty-one years, used gum opium, laudanum, and morphin (whichever could be first obtained) for the past fifteen years, about fifty cents' worth daily. These three cases were placed in the ordinary prison-cells, each one separately. They were given the usual bath on admission and clothed in the prison-clothes and carefully searched, so that no particle of the drug was taken into their cells. All close intercourse with the outer world was prohibited. They were fed on the ordinary prison-fare. Tobacco in small quantities was allowed them, but it was furnished by the prison. The sudden deprivation of opium produced the usual symptoms—severe diarrhea, vomiting, insomnia, etc., with the usual weakness and irritability. The stomach would not retain anything for several days.

The men were visited daily, but beyond this absolutely nothing was given them either in the form of medicine or special food. They were told that the struggle would be a severe one, but short. In less than ten days all desire for the drug had ceased. The stomach became more tolerant, the diarrhea ceased, and in two weeks the patients were rid of all symptoms and all longing for opium. The loss in flesh was soon made up, and they now declare themselves as feeling better than ever before. Strict supervision is still exercised over them, so that no opium can reach them, although they all claim they would not touch it, even to save them from death.

Six cases have been treated by me in this manner, and although this is too small a number to draw conclusions from, yet it seems that the complete withdrawal of the drug, without symptomatic or dietetic treatment, is followed by as speedy and satisfactory results as by any other course, and the impression made by the short serious illness is not soon forgotten, and has a mental effect, which symptomatic remedies would only tend to weaken. In three of the cases the patients were much weakened on entrance, yet the danger of collapse was not encountered.

In several cases in which the drug has been gradually withdrawn and the emesis and diarrhea treated with other medicine, the suffering, though not so acute, was prolonged, and the desire persisted for a much longer period. I realize that such a treatment as is here recommended can only be well carried out behind iron bars, but hospitals for treating victims of the opium-habit are usually provided with the proper means of restraint.

MEDICAL PROGRESS.

Celiotomy for Perforated Gastric Ulcer.—At a recent meeting of the Clinical Society of London a number of cases of perforated gastric ulcer were reported (*Lancet*, No. 3742, p. 1252). MR. L. A. DUNN detailed two cases, one in a girl, fifteen years old, and the other in a woman of twenty-eight years. In the first the perforation measured one-third by one-quarter of an inch, and was found in the anterior wall of the stomach near the lesser curvature. It was with difficulty brought into the wound and closed by a double row of Lembert sutures. The abdomen was flushed and closed in the usual way. The patient progressed favorably until the thirteenth day, when she vomited and cried out with intense pain. It was thought probable that a fresh perforation had occurred. The abdomen was opened, but only a distended stomach attached to the abdominal parietes by a few recent adhesions was found. These were separated and the wound was closed. After this recovery was rapid and uninterrupted. In the second case no perforation could be found upon operation, but the symptoms continued and death occurred after four days. Upon post-mortem examination a large gastric ulcer was found, through the floor of which, as post-mortem digestion had taken place, the gastric contents could be squeezed

MR. SILCOCK reported two cases, in the first of which a small perforation was found in the midst of recent adhesions of lymph, which glued the anterior wall of the stomach and the anterior abdominal wall. The necrotic edges of the ulcer were excised and enfolded by Lembert sutures. A drainage-tube was introduced, the stomach and the parts involved in the operation sponged over with mercuric-chlorid solution, and the wound dressed antiseptically. The patient was fed by nutrient enemata, but despite every care died fifteen days after the operation from septicemia due to the accumulation of pus between the left lobe of the liver and the diaphragm, behind the stomach, and above the spleen. Upon post-mortem examination the perforation was found to have soundly healed. The second case occurred in a woman of twenty-four years, in whom symptoms of perforation appeared suddenly. On opening the abdomen a wide band of fibrinous adhesions was found binding the anterior surface of the stomach to the under surface of the left lobe of the liver, and in the midst of which the perforation appeared. A drainage-tube was introduced and the wound was closed, and the patient made an uninterrupted recovery.

DR. LEES related three cases. The first was one of subphrenic abscess developing after not very acute gastric pain. The purulent accumulation was reached with a trocar and pus was evacuated, but an attempt to reach the abscess by following up the line of puncture failed. Two or three days afterward a sudden attack of hemorrhage proved fatal. In a limited post-mortem examination a large, old, firm-edged whitish ulcer was found on the posterior wall of the stomach. In the second case operation was undertaken within forty hours of the rupture. The ulcer was situated high up on the anterior wall and was readily discovered. The perforation was sutured, but death took place. The third case was also fatal, and a large ulcer was found upon the superior border of the stomach, extending to the anterior and posterior walls. The ulcer on the anterior wall had perforated and was sutured, but there was also a perforation posteriorly, and this had caused death.

DR. TURNEY related the case of a girl, twenty-one years old, in which the symptoms came on gradually with an attack of pain. Slight dulness developed at the base of the left chest, but recovery ensued after a long illness. In another case, a woman, thirty years old, who walked to the hospital, gave a history of having twenty-four hours previously had pain in the epigastrium extending to the left shoulder. There was slight rigidity in the upper part of the abdomen and absence of the usual hepatic dulness. In the course of three months there developed an area of dulness continuous with the spleen, extending two inches upward. Then there appeared an inflammatory lump on the right side of the chest, which was opened, giving exit to bile-stained pus. The patient died, and upon post-mortem examination the liver was found to contain numerous abscesses, as also did the spleen in its upper part. There was pus in the base of the pleura, but not beneath the diaphragm. There was, further, a cicatrized ulcer in the anterior wall of the stomach, and the splenic vein was filled with pus.

MR. WATSON CHEYNE related the case of a girl of seventeen years, presenting distinct symptoms of perforating ulcer having occurred forty-eight hours before coming under observation. The abdomen was opened at once, and the perforation found limited by firm adhesions, so that the wound was left open for a week. Two days after this the patient died, and upon post-mortem examination a large abscess was found above and behind the stomach in the neighborhood of the spleen.

DR. HALE WHITE reported a case in which rupture had occurred while the patient was in bed. Operation was undertaken within six hours, yet death ensued. No trace could be found of the ulcer and little evidence of peritonitis. In another case a woman was suddenly attacked while in bed with pain in the stomach, and presented symptoms of peritonitis, with persistent vomiting, but was relieved by washing out the stomach. Death occurred suddenly, and upon post-mortem examination a perforating ulcer was found firmly adherent to the under surface of the liver.

DR. ROSE BRADFORD referred to the case of a girl seen within eight hours of the accident, and who was operated on within an hour. She recovered perfectly, the only complication being thrombosis of the femoral vein. A second case was that of a young girl who was seen within twenty-four hours of the perforation. The usual incision gave exit to a large quantity of fluid. The patient did well for a fortnight, but the temperature never returned to normal, and she succumbed to an abscess at the base of the left chest. In both instances the usual hepatic dulness was wanting.

Two Cured Cases of Echinococcus of the Liver.—At a recent meeting of the Surgical Society of Berlin, PUPPE (*Berliner klinische Wochenschrift*, 1895, No. 20, p. 441) presented two cases of echinococcus of the liver successfully operated upon. One occurred in a man, twenty-seven years old, who gave no history of having associated with dogs and who was suddenly seized with colicky pains in the right hypochondrium. He came under observation on account of progressive loss of strength. Examination disclosed a tumor in the right hypochondrium, apparently connected with the liver, and reaching to the umbilicus. An exploratory puncture gave exit to clear and albuminous fluid containing particles of lime and crystals of cholesterin, but no hooklets. Nevertheless, an incision was made parallel to the costal arch and a fluctuating tumor connected with the liver exposed. The upper surface of the viscus was sutured to the peritoneum, and an incision made into the tumor evacuated several quarts of light-yellow, clear fluid in which hooklets were found. Digital examination disclosed a cyst seated directly beneath the convexity of the liver. After the operation there was a copious secretion of bile, and several days afterward free hemorrhage in the wound, which was controlled by tamponade and intra-venous saline infusion. The patient failed, however, to convalesce and febrile manifestations appeared, the cause of which was found in a purulent accumulation at the base of the right chest posteriorly. Through an opening left by removal of a portion of the eighth rib in the posterior axillary line, a considerable quantity of pus was evacuated from beneath the diaphragm and a considerable mass of echinococcus membrane. Except for the development of empyema, the further progress of the case was uncomplicated and the patient was dismissed three-and-a-half months after the operation.

The second case occurred in a man, forty-five years old, who had also had nothing to do with dogs and in whom a tumor had been present in the epigastrium since the age of thirteen, at first as large as a hen's egg, but gradually increasing in size. The patient came under observation for cough and pain in the side. There was dulness on percussion over a considerable area at the base of the right chest and the heart was displaced to the left. The liver was distinctly enlarged. The diagnosis was for a time uncertain, but was rendered clear by the development of a swelling in the right hypochondrium, without dyspnea, by enlargement of the liver, and by the appearance of jaundice. An exploratory puncture in the sixth intercostal space between the anterior axillary and the mammillary line disclosed the presence of albuminous fluid with shreds of membrane and detritus, but no hooklets. Through an incision parallel with the costal margin the liver was exposed, and upon its surface a portion of an echinococcus cyst was visible. This was incised and pus and membrane evacuated. At the base of this cyst a second was found, which was likewise opened and pus and membrane evacuated. A third echinococcus cyst was now found, which extended to the posterior wall of the thorax. This was evacuated through an opening left by the resection of a portion of the tenth rib in the left axillary line. The patient bore the operation well and recovered without serious complication.

Gastrostomy in an Infant Four-and-a-half-years Old for Intractable Stenosis of the Esophagus.—MONNIER (*Journal de Médecine de Paris*, 1895, No. 17, p. 265) has reported the case of a boy, four-and-a-half-years old, who, by mistake, had swallowed an unknown quantity of potassium hydroxid. He was at once given water, then oil, and vomiting followed. From this time there was difficulty, and at first pain, in swallowing; greater for solids than for liquids. At the end of seven weeks, examination with a bougie disclosed the existence of a tight stricture in the lower third of the esophagus. The child was losing ground and presented a pale and emaciated appearance; and, in view of the impossibility of passing a dilating instrument, it was decided to perform gastrostomy. This was accordingly done, a transverse incision four-and-a-half centimeters long being made from the articulation of the ninth and tenth ribs on the left side. The peritoneal cavity was opened, the stomach seized with forceps and sutured to the abdominal wall, the mucous membrane not being included. A second transverse incision, 2 cm. long and 16 or 18 mm. higher, was made along the costal region, and the stomach brought into the opening and attached through its serous coat. The lower incision was now closed, the upper narrowed, an incision made into the stomach, and the margins of the mucous membrane attached to the boundaries of the opening. The operation occupied an hour-and-a-half, but was well borne by the child. Nourishment was introduced into the stomach through a catheter. The artificial opening formed manifested a tendency to contract, but this was readily overcome by gentle continuous dilatation for a time. Under this treatment the condition of the child gradually improved. Above the level of the stricture there formed a dilatation in which mucus and other secretion accumulated.

Saturnine Tabes.—At a recent clinical lecture Gowers (*Medical Magazine*, vol. iv, 1895) presented a man who walked with the legs held wide apart and keeping the eyes fixed on the ground. In standing with the feet together and the eyes closed there was uncertainty of station and the knee-jerks were absent. The man had been a plumber from the age of fifteen years, and although he had never had wrist-drop or lead-colic, yet there was a distinct lead-line on the gums. A history of syphilis was excluded. There was no affection of sensibility, although there had been pains not unlike those of ordinary tabes. There was no obvious loss of power in the legs, yet in addition to the defective power of maintaining equilibrium, there was difficulty in rising from the floor. In doing this, the man aided himself by placing his hand on some adjacent object, not so much to aid the muscles as to guide their movements. The pupils presented no abnormality.

Psoriasis Vulgaris in a Child Thirty-eight Days Old.—Rille (*Wiener medizinische Blätter*, 1895, No. 20, p. 316) has reported the case of an infant, thirty-eight days old, with psoriasis that had been present from a few days after birth. The lesions appeared first in the inguinal flexures and on the inner aspect of the thighs, subsequently involving the body in general. In addition there was a universal eczema. The father of the child had also suffered with psoriasis from the twentieth year of life. The condition is exceedingly rare in young children.

THERAPEUTIC NOTES.

Pernicious Anemia Treated with Bone-marrow.—Drummond (*British Medical Journal*, No. 1794, p. 1085) has reported the case of a woman, seventy-three years old, who was silly in manner and conversation and was subject to periodic outbursts of excitement, during which she developed delusions of suspicion. She was obviously anemic, the skin presenting a slightly yellow hue and the subcutaneous fat being abundant. The principal symptoms were weakness and, later, prostration, with various pains of indefinite localization, pruritus vulvæ, associated with slight cystitis, anorexia, palpitation, shortness of breath. No retinal hemorrhages could be discovered, pyrexia was absent, and there was no edema of the feet. On examination of the blood the red corpuscles were found to be reduced to 700,000 per cubic millimeter, while the white numbered about 2000. A few irregular corpuscles and some megalocytes were present, but no nucleated red corpuscles could be discovered. Finely divided bone-marrow was given in milk, at first perhaps an ounce a day, but the quantity was increased as soon as possible to two ounces. Improvement took place very rapidly. In the course of eight days the red corpuscles had risen to 1,140,000 and the patient had gained strength considerably. In the course of six weeks the number had increased to 1,710,000. The patient was now able to sit up in bed and to take most of the ordinary diet. The marrow was given on bread and butter or minced with bread-crumbs. The improvement was fairly well maintained, and, after the lapse of two months, Blaud's pill was given, and, later, arsenous acid. Under this treatment the hemocytes reached 2,500,000 and the hemoglobin 39 per cent. The patient was seized with a sharp attack of quinsy, complicated by edema of the lungs, and died. On postmortem examination sections of the liver responded to tests for iron.

The Treatment of Melancholia and of Insomnia.—The nineteenth annual report of the Medical Director of the New Jersey State Hospital, at Morris Plains, for the year ending October 30, 1894, contains an interesting statement of the results of certain therapeutic observations. It was found that the administration of deodorized tincture of opium three or four times a day in doses of from between five and ten to between sixty and eighty minims, then gradually diminishing the dose, in the treatment of acute melancholia was attended with varying results, marked improvement appearing in some cases, none in others, and positive harm resulting in a third group. All in all, a favorable opinion is expressed as to the usefulness of this mode of treatment in states of mental depression. The attendant sluggishness of the bowels will be satisfactorily overcome with small doses of cascara. The means of inducing sleep employed, in the order of their usefulness, were as follows: Judicious exercise in the open air, paraldehyd, trional, a mixture containing in each fluidram sodium bromid 15 gr., chloral hydrate 15 gr., tincture of cannabis indica 4 ♏, tincture of hyoscyamus 4 ♏, glycerol 15 ♏; sulphonal, and chloral.

The Treatment of Chorea with Electrostatic Baths.—Regnier (*Archives de Neurologie*, vol. xxix, No. 99, p. 380) has reported the case of a girl, nine years old, with a neurotic and arthritic family history, who for a week had presented symptoms of acute articular rheumatism. Two years previously there had been a similar attack with slight endocarditis, leaving a very rough systolic murmur at the apex. The articular condition subsided upon the administration of sodium salicylate and applications of tincture of iodin and a dressing of cotton, but in the course of two weeks a well-defined attack of chorea appeared, with difficulty in swallowing and in speech. The patient was given a static bath of thirty minutes, and during the night was much quieter than she had been for some time. The bath was repeated at first daily, and subsequently on alternate days, and the improvement continued. At the end of six weeks the movements had almost entirely ceased.

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SATURDAY, JUNE 29, 1895.

PROFESSIONAL INDIFFERENCE TO PROFESSIONAL ENEMIES.

IN England a subscription in honor of a physician solely on account of his exceptional ability as a cricket-player is immensely popular. In the United States a subscription to pay the expenses and to publish the report of a trial, the economic, social, and professional importance of which is simply incalculable, has met with the following response:[1]

Dr. George M. Gould	$10.00
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In some future century the historian of medicine must be astounded at to-day's thousand proofs of professional indifference to the enemies of the profession and of the work to which the profession is devoted. He may cite the fact that a great and honored society deems it the greatest point of pride that it has nothing whatever to do with anything but strictly scientific medicine. We appreciate the motive and understand the reasons for such concentration of gaze upon a single duty, but we cannot hide from ourselves the fact that it is a very old psychologic law that the more narrowly a single duty is followed the more oblivious one becomes to other duties—until finally the narrow duty may itself become very crime.

Besides the illustration cited none could be more striking than the present professional disregard of the splendid work so modestly, bravely, and effectively carried to a successful issue by Dr. JAMES E. REEVES in his fight with the Amick Company. A large number of State and national societies have met since Dr. REEVES' noteworthy victory, and not one of them by any public action has so much as alluded to it. As we write the advance-sheets of the report of the trial are before us. We have read them with delight, and wish once again to arouse in the minds of the medical men of the United States a sense of their obligation to the good men engaged in this trial, the defendant, the attorney, the judge, and the jury. It even yet seems marvellous, in our quack-ridden land, that such a result could have been brought about. Every physician should read the interesting story as related in the report, in the satirical letter of Dr. REEVES, the charge of the judge, the arguments and declarations, and especially in the specious logic of the plantiffs' attorney, so redolent of popular error and demagogism. We regret that we cannot republish the entire pamphlet in THE MEDICAL NEWS, but we regret far more the inertia of professional sentiment that is shown in the subscription of but fourteen men, amounting in all to the magnificent sum of $141.

One of the most delightful things about the whole affair is the evident modesty and purity of motive, the love of professional honor, and the detestation of professional dishonor that from the first has inspired the noble defendant in this celebrated case. It is abundantly shown throughout the report and in his private letters that, far from wishing to center attention upon himself, Dr.

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[1] This list is reproduced as sent, somewhat reluctantly, we surmise, by Dr. Reeves, at our request.

Reeves has wished only to inspire the profession with a sense of our common duty in meeting a despicable enemy bravely. We doubt not, were it not for the evidences of morality and sympathy thereby shown on the part of his professional brethren, he would himself prefer to pay the whole expenses of the trial and publication. But we do not propose to permit this. The far-reaching consequences of this trial cannot be overestimated, and we again urge our readers to secure a copy of the report by a subscription, at least, of 50 cents. It is inexpressibly shameful that we should allow one of our number to fight our common battle for us single-handed and alone, with hardly a word of encouragement at the time, and with only fourteen *thank-you's* after it is all over. Let us have a standing vote!

EDITORIAL COMMENTS.

Inebriety and Alcoholic Insanity.—In the Seventy-first Annual Report of the Retreat for the Insane at Hartford, Conn., the Superintendent, Dr. H. P. Stearns, makes some interesting comments upon inebriety and its treatment, and upon alcoholic insanity. During the years 1894 and 1895 there were received into the retreat eleven patients classified under the diagnosis of alcoholic insanity. It was further found that ninety-five patients had been under treatment for inebriety in the preceding twenty years. Of this number, one died, six were discharged as improved, eighteen as stationary—that is, not improved—and seventy as recovered. The opinion is expressed that in the confirmed inebriate the nutrition of the nerve-cells has become seriously impaired by the artificial over-stimulation of alcohol, so that the normal physiologic functions are no longer properly performed. As a result waste products accumulate and act as autotoxic agents, inducing nutritive, functional, and structural changes in the cells themselves and the surrounding tissues. It is obvious that the affected elements of the nervous system are not to be suddenly brought back into normal action by the influence or shock of any violent stimulant or poison of another character which may be introduced into the system for a few days or weeks. Of fifty-two cases admitted to the retreat during four years, with toxic insanity, eighteen were graduates of so-called Keeley institutes. Of these several were suicidal when admitted, and two committed suicide after they were prematurely removed by friends.

* * *

The Dose of the Mydriatic for Diagnosis and Therapeusis.—A correspondent has kindly called our attention to the possible danger of systemic effects of the mydriatic to be used for diagnostic and therapeutic purposes, as suggested in The Medical News of June 8th. It must be confessed that in the hands of physicians this danger is slight, but the caution may be made that for the purposes indicated the dose required is extremely small. Homatropin is the best drug to use in such instances, and a drop once a day of a solution of eight grains to the ounce will usually be found sufficient. If atropin is used, a two-grain solution will probably be strong enough, and a half-drop instilled once every two or three days will usually accomplish the desired result. Once in a great while a patient may be found with a remarkable susceptibility even to such almost infinitesimal doses, and, if so, a drop of cocain-solution, ten grains to the ounce, could be used twice daily, instead. In diseases of the digestive organs with already deficient secretion, it goes without saying, that the systemic effects of the mydriatic should be avoided by the proper dosage to secure the local effect without a general absorption of unnecessarily strong or needlessly frequent instillations.

* * *

The American Journal of Obstetrics and Diseases of Women completed with the June number its twenty-first volume. The large size of this issue, together with its varied and valuable contents, as well as the many and excellent illustrations, seems deserving of special notice. Its 171 pages contain eleven original communications, reports of the American Gynecological Society, and of gynecologic and obstetric societies in Chicago, New York, and Philadelphia, and an elaborate index of fourteen pages. We are glad to note that the *Journal* has adopted the rational mode of spelling by omitting the diphthongs *æ* and *œ*. American medicine and American medical literature may well be proud of so distinguished a representative of a department of medical science that Americans have so distinctively made their own.

* * *

As to Patented Foods.—We regret extremely the mention and eulogy, in The Medical News of May 25th, of a method or process that has since appeared as having been patented. We allude to the Walker-Gordon Co.'s method of treating cow's milk, referred to in the article of Dr. R. Tunstall Taylor. The paper of Dr. Taylor was read April 26, 1895, and the Patent-office specification of the method bears date May 21, 1895. Neither the author of the paper nor the editor of The Medical News knew of any existing or contemplated patent. In view of the justifiable condemnation in the paper of patented and secret methods and articles, the position of the author and of The Medical News might be unjustly criticised without the present word of explanation.

SOCIETY PROCEEDINGS.

AMERICAN ASSOCIATION OF GENITO-URINARY SURGEONS.

Ninth Annual Meeting, Held at Niagara Falls, May 28 and 29, 1895.

(Concluded from page 716.)

Dr. John P. Bryson, of St. Louis, read a paper entitled

A TABULATED REPORT OF TWENTY-SEVEN OPERATIONS FOR PROSTATO-MYOMECTOMY BY THE SUPRAPUBIC ROUTE, WITH REMARKS.

The series was commenced when this method of attacking the prostate was still in its infancy and the technique far from complete. The ages of the patients ranged from fifty to seventy-eight years. The mortality for the entire series was a little over 25 per cent., but this does not represent the true death-rate of the operation: three cases should be excluded, one of which died from hemorrhage from sarcomatous disease of the prostate and two from pyelonephrosis. Eliminating these three there were twenty-four cases, with four deaths, a mortality of 16.6 per cent. A radical cure was obtained in thirteen of the cases, as evidenced by the absence of residual urine, a good rest at night, and a practical cure of the cystitis. In two cases no benefit whatever appeared to have resulted; these patients were aged, respectively, seventy-two and seventy-eight years, were far advanced in senile degeneration, and were operated on mainly in the hope of relieving the most distressing symptoms of "prostatism," namely, frequent and painful urination and inability to get rest or sleep either by night or by day.

Dr. Eugene Fuller, of New York, reported

SIX SUCCESSFUL AND SUCCESSIVE CASES OF PROSTATECTOMY,

together with a method of operating in those cases by means of which the prostatic obstruction is enucleated. Ordinarily, suprapubic cystotomy is first performed; then an incision is made through the floor of the bladder; this incision extends from the lower margin of the vesical opening of the urethra backward for about an inch-and-a-half, and is made with rough serrated-edged scissors, in order to avoid hemorrhage. The forefinger of one hand is then introduced through this cut, while the fist of the other exercises counter-pressure upon the perineum, in order to bring the growth well within the reach of the forefinger. By manipulation the obstruction can gradually be enucleated, the hypertrophy coming away in one or several pieces. After the enucleation, a perineal incision is made for dependent drainage, the inner end of the drainage-tube entering the bladder through the lower vesical incision made for the enucleation. The supra-pubic vesical and abdominal incision is then tightly sutured, with the exception of a small space for a drainage-tube. Mr. Fuller stated that he has never experienced trouble from hemorrhage, either primary or secondary, by this method of enucleation, and felt safe in closing the suprapubic cut. He claimed that by this method the mortality is reduced, and excellent results obtained.

Dr. J. P. Bryson, of St. Louis, read a paper entitled

A CASE OF COMPLETE CASTRATION FOR PROSTATIC OVERGROWTH; OBSERVATION FOR FOUR MONTHS.

The patient was a man, aged seventy-four years, who first showed evidence of beginning prostatism at the age of fifty-six. When he came under observation there were six ounces of residual urine, and marked diurnal and nocturnal frequency. Cystitis and mild pyelonephritis developed. Two separate attempts to enter upon catheter-life failed, on account of the great difficulty to enter the bladder and the recurrence of cystitis. Dilatation of the heart and pulmonary emphysema supervened. Complete castration was performed four months ago. This was followed by a marked and satisfactory diminution of the enlarged prostate, without change in the frequency of urination, day or night, and with but a slight decrease in the amount of the residual urine. The pyuria and pyelonephritis remain practically the same as before the operation.

Dr. J. William White, of Philadelphia, read a paper on

THE RESULTS OF TREATMENT OF HYPERTROPHY OF THE PROSTATE.

an abstract of which was published in The Medical News of June 8, 1895, page 651.

Dr. E. C. Burnett, of St. Louis, read a

REPORT OF A CASE OF EARLY OBSTRUCTION OF THE EJACULATORY DUCTS.

The patient was an unmarried man, aged thirty-five years, who, at the age of five, was operated on for stone in the bladder, left lateral lithotomy being performed. The patient stated that his testicles almost always pained him for a day or so after sexual indulgence. Sexually, he claimed that he was perfectly normal, excepting that he had never had an emission of semen. The external genitals were large and well developed. Upon the introduction of an endoscope into the urethra, the prostatic portion of the canal was found to be extraordinarily short, and the verumontanum was so small as to be barely distinguishable from the surrounding tissue. Palpation through the rectum for the seminal vesicles disclosed the fact that they were not appreciable to the touch, and that the prostate was barely definable. During one of his examinations Dr. Burnett noticed the scar on the left side of the perineum, and on inquiry he was informed of the lithotomy-operation performed thirty years before. In this incident in the patient's early history lies the solution of the question as to the cause of his aspermatism. Obviously, in the performance of that operation the ejaculatory ducts were torn across, becoming permanently occluded, and through the occlusion of these ducts there followed arrest of development of the prostate gland and seminal vesicles. Obstruction of the ejaculatory ducts is given as one of the causes of atrophy of the seminal vesicles, but Dr. Burnett could find no reference to any such influence upon the prostate.

Dr. Hayden reported a case of double castration for hypertrophy of the prostate, in which there was marked relief of all the symptoms, and the patient's general condition greatly improved.

Dr. Arthur T. Cabot, of Boston, said he is inclined to believe that the early good effects following the operation of double castration for hypertrophied prostate are largely or partly due to the diminution of the blood-supply to the prostate; the relief is too sudden to be accounted for by the process described by Dr. White. Dr. Cabot then called attention to the possible secondary effects of double castration on the nervous system. In a certain number of the cases collected by Dr. White acute mania followed the operation, and it is possible that secondary nervous effects, such as premature senility, may develop, Dr. Cabot then reported a case in which he performed double castration and litholapaxy at one sitting. The patient was a man, aged seventy-five years, and in a rather shaky mental condition. After the operation he became decidedly maniacal, and his condition failing to improve it was decided to try injections of testiculin. The improvement following the use of testiculin was very marked. The man at once became calmer and more reasonable. Before his mental condition was entirely restored to the normal the injections were stopped, because of the pain to which they gave rise, but the improvement continued. Dr. Cabot said that he did not know what conclusions can be drawn from this case. It seems, however, to emphasize the importance of our knowing more about the possible remote effects of the operation on the nervous system before we are willing to displace other operations by this modern one, which certainly has the great merit of being without danger, so far as its performance is concerned.

Dr. Edward Martin, of Philadelphia, stated that he had seen a number of Dr. White's cases in which double castration was performed for hypertrophied prostate and can confirm his statements regarding them. He reported one case of his own in which the operation was followed by very satisfactory results.

Dr. Bell said that his own results with prostatectomy have not been so favorable as those reported by Drs. Fuller and Bryson. He has operated in five advanced cases, all in very old men, and of these two died. Death in both instances took place several days after the operation, apparently from toxemia. At the autopsies nothing was found to account for the fatal issue. With regard to double castration, Dr. Bell said that he felt some prejudice against the operation. He dislikes the mutilation which it involves, and it is very hard to believe that such rapid atrophy as has been reported occurs. We must probably make some allowance for the reports of cases published by enthusiasts, who are perhaps not so scientific or so skilled observers as is the originator of the operation.

Dr. W. T. Belfield, of Chicago, said that Dr. Bryson's paper showed the improvements that can be brought about in the technique of prostatectomy by extended experience. His results are based on a larger number of cases than have been reported by any other single operator, and they give a fair idea of the position of prostatectomy to-day. Dr. Fuller's cases are even more remarkable, in that there is an entire absence of mortality. As regards the operation of castration for hypertrophied prostate, Dr. Belfield said it evidently fails in many instances, and he would be unwilling to perform it until he has had his fingers in the prostatic urethra. He has seen three cases in which the operation was urged in which stone was found in the bladder. The operation is performed so easily that it is much more likely to be abused than is one that requires a greater degree of skill.

Dr. Chismore said that he was glad to see a more favorable outlook for operative measures on the prostate. As regards double castration, the facts that are fast accumulating on this subject will soon bring out the proper value of the operation.

Dr. E. E. King, of Toronto, said that in the two fatal cases of double castration reported by him, and included in Dr. White's statistics, death could not be attributed to the operation itself. The first patient died of pneumonia on the fifth day. At the post-mortem the prostate was found to be reduced in size about one-half, and its glandular and stromal elements showed evidences of shrinking. The second patient died on the thirteenth day, and the autopsy revealed a pyelonephrosis. In both instances there was marked improvement in the urinary symptoms.

Dr. Glenn said that, from a physiologic standpoint, the prostate should diminish in size as old age comes on and the sexual propensity declines. He expressed the opinion that prostatic hypertrophy is largely the result of early gonorrheal infection. In the one case of double castration performed by him, which was included in Dr. White's mortality-list, death could not be attributed to the operation itself.

Dr. Otis stated that he had heard from the Surgeon-General of Japan that enlargement of the prostate does not exist in that country.

Dr. Palmer said that the etiology of the condition is not clear. It is claimed that it is found most among those who neglect to urinate when necessary.

Dr. Paul Thorndike, of Boston, read a paper on the

TREATMENT OF STRICTURE OF THE DEEP URETHRA.

He stated that the weight of surgical opinion to-day is probably in favor of cutting from without in such cases of stricture of the deep urethra as cannot be properly cared for by careful and gradual dilatation with graduated instruments. A very large percentage of cases of deep stricture need operative interference of a kind more immediately efficacious than that which can be given by any form of gradual dilatation. Very many of these cases need a cutting operation from without. An external urethrotomy, properly performed, not only drains the bladder, but also attempts to cure or improve the strictured area itself by dividing the stricture. To accomplish this end the operation is always one of exactness and precision, and frequently one of great technical difficulty. The method of procedure that Dr. Thorndike usually employs in these cases is to perform first an internal urethrotomy with the Maisonneuve instrument, and at once follow it by an external perineal urethrotomy. He then detailed the steps of the operation, which he stated can be done in all cases in which the introduction of a filiform bougie is possible.

Dr. Palmer stated that he continues to treat his cases of deep urethral stricture by means of internal urethrotomy, followed by the introduction of sounds of increasing size. In following this method the most careful attention to asepsis is necessary, and the patient should not be allowed to urinate through the urethra for several days. The hemorrhage is sometimes severe, but can usually be controlled without much trouble.

Dr. Otis said that on account of the free hemorrhage he no longer performs internal urethrotomy in cases in which the stricture is located more deeply than five-and-one-half inches. With a perineal opening there is no difficulty in controlling the hemorrhage.

Dr. Arthur T. Cabot, of Boston, reported

A CASE OF CARCINOMA OF THE URETHRA.

The patient was an elderly man who thirty-five years previously had had gonorrhea, from which he entirely recovered. Nine years ago an abscess formed in the perineum, through which, however, no urine passed. About a year ago he began to have some difficulty in passing water. He did not, however, have complete retention, and his condition improved somewhat under medical treatment. Nine weeks before he entered the hospital a swelling appeared in the perineum which was painful and confined him to bed. At the end of a fortnight it was incised and pus was evacuated from it. A week later the urine began to come through the opening. After a brief period of comparative comfort the swelling began to spread and less and less urine passed through the natural passage until all of it came through the fistula. Examination showed the perineum to be occupied by an indurated mass extending forward beneath the scrotum, with two fistulous openings over it. The urethra was impervious to instruments, even of the smallest size, all of them being arrested at about the peno-scrotal angle.

The perineum was widely laid open, considerable pus being evacuated from various side-pockets. The walls of the abscess were of such a sloughy character that nothing unusual was noticed at that time in the character of the case. The greater part of the induration cleared up in a few days, but there still remained a hard, sloughing mass at the bottom of the cavity about the urethra. Ether was again administered two weeks later, and a careful examination showed this hard tissue to be distinctly of the character of a neoplasm. It extended forward to the peno-scrotal angle, and backward to just anterior to the triangular ligament. The prostate was slightly enlarged, but not more than is usual in a man of his age. Under the microscope the tumor proved to be a carcinoma, of which the cells were small and cylindrical in character. Its origin from the urethral mucous membrane, or from some of the glands associated with it, was made clear by the anatomic relations found at the operation. The tumor was separated by a wide interval from the skin, and did not extend in either direction beyond the perineal portion of the urethra. As regards treatment, the case came under observation too late to admit of any possibility of eradicating the tumor by operation. The only further treatment was directed to keeping the urine in a bland and unirritating state and to diminishing the discomforts of the sloughing mass in the perineum by the use of antiseptic applications. Dr. Cabot stated he had been able to find but five recorded cases of urethral carcinoma.

Dr. Fuller referred to a case of carcinoma of the urethra that came under his observation some months ago. It was impossible to determine in that case exactly where the disease began.

Dr. Bryson referred to two cases coming under his observation in which the disease evidently began in the fossa navicularis.

Dr. Wm. K. Otis exhibited the model of an instrument, consisting practically of a urethroscope to which a telescope is attached, for the purpose of giving a magnified view of the urethroscopic field.

Dr. Bransford Lewis exhibited a circumcision tractor and clamp.

Dr. Glenn exhibited an instrument that he had devised for the purpose of milking the prostate and seminal vesicles. He also showed a circumcision forceps.

Dr. George Chismore read a paper entitled

A CASE OF TRAUMATIC RUPTURE OF THE URETHRA; RESTORATION AFTER THIRTY SIX YEARS.

The patient was a brewer, aged forty-two years. At the age of six years, in order to avoid constantly wetting the bed at night, for which he had often been punished, he tied a string about the penis near the scrotum. The constriction thus produced entirely severed the urethra and corpus spongiosum, and divided fully one-half of the corpora cavernosa. Two attempts were made in Germany to restore the urethra by plastic operations, but both failed. Several months ago he came under Dr. Chismore's observation, who first made a perineal section, through which the urine was allowed to pass, and then denuded the tissues of the old wound, precisely as is done in attempting to close an old, torn perineum. The two ends of the urethra were then cut off squarely, a staff introduced, and then the severed portions of the corpora cavernosa were closely drawn together by means of a deep line of buried catgut sutures. Acccurate approximation of the under surface of the urethra was obtained by three catgut sutures; no attempt was made to suture the upper or deeper half of the urethra. The corpus spongiosum was carefully sutured and the integument then brought together.

On the second day after the operation the man had an attack of delirium tremens. On the thirteenth day the catheter was removed and the perineal incision permitted to close. The man now passes his urine entirely through the normal urethra, the severed ends of which have united so closely that the introduction of a bulbous sound fails to reveal the line of union. Since the operation the man has had two erections without pain. Dr. Chismore exhibited a number of photographs to illustrate the technique of the operation.

The following officers were elected for the ensuing year: *President*—Dr. Claudius H. Mastin, of Mobile, Ala.; *Vice-President*—Dr. Francis S. Watson, of Boston, Mass.; *Secretary and Treasurer*—Dr. Wm. K. Otis, of New York.

It was decided to hold the next meeting at Atlantic City, N. J.

AMERICAN NEUROLOGICAL ASSOCIATION.

Twenty-first Annual Meeting, Held at Boston, June 5, 6, and 7, 1895.

(Continued from page 718.)

Second Day—June 6th.

Dr. James J. Putnam, of Boston, read a paper on

HYPEROSTOSIS CRANII,

in which he reported four cases of this rare disease, showing two of the patients, besides photographs and specimens illustrative of the other cases and of the disease in question. Hitherto these enlargements of the cranium have been considered as of inflammatory origin, but Baumgarten and Starr have brought forward reasons for thinking that the disease may be a species of trophic affection, distinctly analogous to myxedema and akromegaly. This interesting hypothesis cannot yet be accepted as proved. The symptoms of the disease are mainly due to pressure by bony masses on the cranial contents, especially upon the nerves and vessels that perforate the skull. There is often exophthalmos, due to partial obliteration of the orbit, and usually some signs of paralysis or irritation of cranial nerves. Epileptic attacks occasionally occur, and sometimes very early in the disease. Double optic neuritis and other signs of intra-cranial pressure may be present, and there is almost always headache, due to the interstitial bony changes. The head is sometimes enormously enlarged, and when, as frequently happens, the bones of the face are involved, peculiar deformities may be present, such as suggested to Virchow the name of "Leontiasis Ossea." Baumgarten has pointed out that the disease generally begins in youth, and in one of the reporter's cases the first indications were noticed when the patient was five years old, in the form of two exostoses near the vertex, which afterward assumed a great size. The cranial bones usually become very dense, as from an inflammatory change, but sometimes the diploe is rarefied. The question of operation suggests itself as a means of reducing intra-cranial pressure or of cutting off the blood-supply to the bone. In this connection it may be noted that the channels of the meningeal vessels are sometimes strongly marked, sometimes nearly obliterated.

Dr. Starr, of New York, said that these cases were more advanced and more extreme than those he had reported. He tried thyroid extract in one of his cases without benefit. He was led to do this as he had seen some improvement after its administration in a patient with akromegaly.

Dr. Morton Prince narrated the history of a case under his observation in which this condition of the cranium followed a traumatism that occurred two years before. The enlargement was not general, but was mostly confined to the frontal bone. At the autopsy the orbital plates were found enormously enlarged, and the anterior portion of the brain had undergone extreme compression.

Dr. G. M. Hammond, of New York, asked if structural changes existed in other bones. His case was of syphilitic origin, and there were nodosities and other enlargements in the long bones.

Dr. Putnam concluded that when syphilis was present these cases should be placed in a different class. There is a tendency to bony enlargements in these cases.

Dr. F. T. Miles, of Baltimore, showed the brain of a child, three-and-a-half years old. It was from an idiot with left hemiplegia. The right cerebral hemisphere was atrophied to a great degree in all its lobes and convolutions, and the right crus was small. The left cerebellar hemisphere was one-third smaller than the right.

Dr. H. L. Worcester, of Danvers, had made autopsies in three cases in which there was decided asymmetry of the cerebral hemispheres, but the cerebellum presented no abnormity.

Dr. Charles K. Mills had reported some years ago the case of a negro murderer in which there was atrophy of one cerebellar hemisphere, with opposite cerebral atrophy.

Dr. Starr said that this condition is usually congenital and is often found in idiots.

Dr. Edward B. Angell, of Rochester, had seen a similar condition at autopsy in a patient thirty-three years of age, in whom a cyst of the cerebrum had existed since childhood.

(To be concluded.)

NEWS ITEMS.

The Litchfield County (Conn.) Medical Association will hold its annual meeting at the residence of Dr. Frederick S. Dennis, at Norfolk, Conn., on July 9, 1895. The following papers will be read: "The Relation of Sanitary Science to the Medical Profession," by Dr. R. S. Goodwin, of Thomaston; "The Antitoxin-treatment of Diphtheria," "Some Interesting Pathologic Observations Concerning Gonorrheal Infection," by Dr. William H. Welch, of Baltimore, Md.; "Notes on Some of the Newer Remedies Used in the Treatment of Diseases of the Skin," by Dr. L. Duncan Bulkley, of Norfolk and New York City; subject to be announced, Dr. Frederick S. Dennis, Norfolk and New York City; "Remarks Upon Nuclein or Proto-nuclein," by Dr. William H. Porter, New York; "The Feeble-minded," by Dr. G. H. Knight, of Lakeville; "Prophylaxis of Tuberculosis," by Dr. J. C. Kendall, of Norfolk.

The American Climatological Association held its twelfth annual meeting at Hot Springs, Va., on June 13, 14, and 15, 1895. The following officers were elected for 1896: *President*, Dr. J. B. Walker, of Philadelphia; *Vice-Presidents*, Dr. Charles E. Quimby, of New York; Dr. James A. Hart, of Colorado Springs; *Secretary and Treasurer*, Dr. Guy Hinsdale, of Philadelphia; *Council*, Dr. Frederick I. Knight, of Boston; Dr. W. E. Ford, of Utica; Dr. Roland G. Curtin, of Philadelphia; Dr. Isaac Hull Platt, of Lakewood; Dr. S. E. Solly, of Colorado Springs.

Hospital for Tuberculosis in Massachusetts.—A bill has been passed by the Massachusetts House of Representatives making mandatory the establishment of a State Hospital for Tuberculous Patients.

BOOKS AND PAMPHLETS RECEIVED.

Astigmatism as a Factor in the Causation of Myopia. By Leartus Connor, A.M., M.D. Reprinted from the American Lancet, 1895.

Intestinal Anastomosis. With Report of a Case. By Frederick Holme Wiggin, M.D. Reprinted from the New York Medical Journal, 1894.

A Surgical Kit Containing All the Essentials for Aseptic Operations at Private Residences. By Reuben Peterson, M.D. Reprinted from the American Gynecological and Obstetrical Journal, 1894.

Hydrops Articulorum Intermittens. Report of a Case. By Samuel Kennedy, Ph.G., M.D. Reprinted from the Journal of the American Medical Association, 1894.

Annual Report of the Board of Visitors to the United States Military Academy, made to the Speaker of the House of Representatives, for the Year 1894. Washington: Government Printing Office, 1894.

Lectures on Hygiene and Sanitation. By Seneca Egbert, A.M., M.D. Philadelphia: Franklin Printing Co., 1894.

Electro-therapeutics in the Practice of Dermatology. By Richard B. Faulkner, M.D. Reprinted from the Journal of Electro-therapeutics, 1894.

Possible Relationship between the Tubercular Diathesis and Nitrogenous Metabolism. By Samuel G. Dixon, M.D. Reprinted from the Therapeutic Gazette, 1894.

A Case of Cardiac Epilepsy. By William Broaddus Pritchard, M.D. Reprinted from the New York Polyclinic, 1894.

The Diagnosis of Syphilis of the Nervous System. By W. B. Pritchard, M.D. Reprinted from the North Carolina Medical Journal, 1895.

Sixteenth Annual Report of the Board of Directors of the Eighth Ward Association of the Philadelphia Society for Organizing Charity. November, 1894. Philadelphia.

Hospitals for the Insane. Their Scope and Design. By Edward F. Wells, M.D. Reprinted from the Journal of the American Medical Association, 1895.

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